
# *A Report from Hawaii Child Death Review*

# *2001-2006*

Submitted by the

Hawaii State Department of Health

Family Health Services Division

Maternal and Child Health Branch

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  - Children with Special Health Needs Branch
  - Emergency Medical Services Systems and Injury Prevention Program
  - Maternal and Child Health Branch
  - Office of Health Status Monitoring
  - Public Health Nursing Branch
  - Women, Infants and Children Services Branch
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- Honolulu Medical Examiner's Office
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- Child and Parent Advocates
- Hawaii State Coalition Against Domestic Violence
- Kapiolani Child Protection Center

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# Executive Summary

The Hawaii Child Death Review (CDR) Program conducts systematic, multidisciplinary reviews of factors that contribute to the death of children under 18 years of age. The CDR program is intended to provide information to all who promote and influence child safety. This report presents findings for 372 comprehensively reviewed deaths of children out of the total of 1,079 who died in Hawaii from 2001-2006, both resident and non-resident.

*A Report from Child Death Review 2001-2006* focuses on data from the Child Death Review Case Reporting System. The National Center for Child Death Review and Prevention created this system with input from a 30-person workgroup from 18 states over a two-year period.

The term "burden" is used in this report to contrast the percentage of deaths for a group to the respective percentage of that group in the population. Demographic information for residents, when available, was analyzed to determine incidence and burden. This analysis is used to provide all who allocate resources with information to target prevention efforts.

***Introduction*** The Hawaii CDR Program was established by the Department of Health (DOH) in 1997 as a result of enabling legislation, Hawaii Revised Statutes § 321-341 through § 321-346. Six appointed groups of field professionals called "Local Teams" and the State CDR Council are the core of this program. Local teams are composed of multidisciplinary, interagency professionals appointed by their respective agencies to participate on a CDR local team in the jurisdiction. The DOH provides oversight for the local teams and State CDR Council.

The National Center for Child Death Review supports state CDR programs in the use of a standardized data collection system, which has been in use since 2005. The Hawaii CDR Program uses this system to collect comprehensive information from multiple agencies participating in a child death review. CDR information includes circumstances of death, investigative actions, primary causes of death, risk factors, acts of omission (neglect) or commission (abuse) that may have caused or contributed to death, services provided or needed, and actions recommended.

***Success Stories*** The commitment and dedication of local teams and the Child Death Review Council is a success story. Team members are involved in efforts to (1) improve infant death investigations, (2) promote early access to prenatal care and safe sleep, (3) enhance child passenger safety awareness, and (4) promote suicide and domestic violence prevention.

One benchmark of success for Child Death Review programs across the nation was the Healthy People 2010 Initiative (Objective 15.6) concerning review of child deaths due to external causes. Hawaii, along with 37 other state CDR programs, reported progress on this objective during 2006. Of the 37 states, Hawaii was one of 23 states that reviewed more than 90% of these types of deaths.

***Information on All Child Deaths*** The CDR is a two-step process in Hawaii—vital record screening and comprehensive reviews. The criterion for a comprehensive review is based on preventability. While there is no common national standard to define preventability of child deaths, many states adopt a similar definition: a child's death is considered preventable if the community or an individual could have reasonably done something that would have changed the circumstances that led to the child's death.

All 1,079 child deaths that occurred in Hawaii from 2001-2006 were screened. The child death rate for Hawaii (56.7 per 100,000) was slightly lower than the U.S. equivalent (63.8). The highest child death rates in Hawaii were for Pacific Islander (117.2 per 100,000) and Black (106.8), followed by Native Hawaiian (74.6) children. More infants died than all the children of other ages combined. The death rate in Hawaii for males (78.9 per 100,000) was greater than that for females (47.6) which is consistent with child death rates in the U.S. It should be noted that while rates are highest among Pacific Islanders and Blacks, these are relatively small populations and compared with native Hawaiians, and therefore represent far fewer actual cases. A small proportion (7%) of 1,079 child deaths were among non-residents (n=73). Among non-residents, one-third (34%) were Pacific Islander children. Among resident children, nearly half (42%) were Native Hawaiian and over one quarter (28%) were Asian.

The manners of deaths were determined to be natural (72%), accidental (15%), undetermined (8%), suicide (3%), or homicide (2%). Accidental describes a manner of death and henceforth in this report will be categorized as injury.

The leading primary medical cause of death was prematurity and the leading injury cause of death was the category of motor vehicle and other transport.

***Comprehensively Reviewed Deaths*** This summary of comprehensive review information is provided to raise awareness about the circumstances of child deaths in an attempt to support existing local, state, and national prevention initiatives.

Acts of omission (neglect) or commission (abuse) by a parent or other caregiver that result in harm, potential for harm, or threat of harm to a child are defined as child maltreatment by the Centers for Disease Control and Prevention and are considered preventable.

One third (n=372) of all (n=1,079) deaths were comprehensively reviewed by local teams. Teams made preventability determinations after discussing the circumstances related to the child's death: (1) Was there a causal link with a human act related to the death? (2) Was the caregiver or supervisor an agent of this act? (3) How did the age and developmental needs of the child relate to the incident? And (4) What were the human act or acts that may have contributed to the incident leading to death?

Local teams identified 73% of these 373 deaths as probably preventable and only 4% as probably unpreventable.

- From the data collected, the leading primary causes of injury deaths were motor vehicle and other transport, and asphyxia.
- Overall, the highest proportion of race/ethnicity for non-resident child death was White followed by Asian. The proportion of children 10-14 years of age was higher among non-residents deaths. The gender distribution among males and females was equal among non-resident deaths.
- Of resident children, almost half were Native Hawaiian. When compared to the respective resident populations, Pacific Islander and Native Hawaiian children had a higher burden of death.
- Almost half of the resident child deaths were infants. Compared to the respective resident populations, infants and children 15-17 years of age had a higher burden of death, while children 5-9 and 10-14 years of age had a lower burden.
- Acts of omission (neglect) or commission (abuse) may be passive or active. Acts of poor or absent supervision, child neglect, child abuse or other acts may have caused or contributed to the cause of death.
- Parents were the primary and secondary caregivers for a majority of the children. The supervisor for one quarter of the decedents was someone other than these caregivers and the most common relationship for other supervisors was baby sitter, grandparents and relatives. Some supervision was identified for 58% of the reviewed deaths and poor supervision was identified for 10%.
- Generally, deaths in infants and children 1-4 years of age were related to acts in which inappropriate supervision was likely an important factor.
- The place of incident for over half of these deaths was the child's home, nearly one-quarter occurred on road ways and a smaller number occurred in either licensed or unlicensed foster care, group homes, relative, childcare, and other places.

***Comprehensively Reviewed Deaths*** This summary of comprehensive review information is provided to raise awareness about the circumstances of child deaths in an attempt to support existing local, state, and national prevention initiatives. The comprehensive review provides an opportunity to discuss many child risk and protective factors including health insurance, histories of substance abuse, problems in school, child maltreatment, placement outside of the home, and delinquent or criminal history.

- Health insurance information was available for only half of the cases. Of those reported, more than half had Medicaid or a state subsidized insurance plan.
- For children 10-17 years of age, about a third had positive histories of substance abuse. Nearly half abused more than one substance. The substances reported were marijuana,

alcohol and other drugs. These findings were consistent with substances identified in autopsy toxicology screens.

- While federal privacy law limited access to school information, issues of truancy (53%), academic problems (28%), and behavioral problems (9%) were noted.
- A history of child maltreatment as a victim was noted for 20% and one third had more than one form of child maltreatment. Neglect was reported for about three quarters and physical abuse for half of these children. Some children and their siblings had been placed outside of their home at one point in time.
- Nearly all of the children lived in a parental home, with slightly less than tenth living in the home of a relative.

***Selected Topics*** The selected topics addressed in this report are sleep related, motor vehicle and other transport, asphyxia, drowning, and suicide. There are several common themes among the selected topics including variation due to race, geography, and age. There are also significant components regarding supervision where acts of omission or commission contributed or probably contributed to the death.

Further, CDR findings provide insights about the burden of child deaths in Hawaii:

- There was a higher burden of child deaths for Neighbor Island Counties combined for motor vehicle and other transport, asphyxia, drowning, and suicide deaths.
- Native Hawaiian resident children had a higher burden of infant sleep related deaths, motor vehicle and other transport, asphyxia, drowning, and suicidedeaths.
- Asian children had a lower burden of deaths for infant sleep related, motor vehicle and other transport, asphyxia, drowning, and suicide deaths.
- There was a higher burden of deaths than expected for children 15-17 years of age among motor vehicle and other transport, asphyxia, and suicide deaths.
- Infants had an increased burden among asphyxia and drowning deaths, but not among motor vehicle or other transport deaths.

An act of omission (neglect) or commission (abuse) contributed or probably contributed to almost all deaths among the selected topics: sleep related infant deaths (85%), motor vehicle or other transport (85%), asphyxia (95%), drowning (95%), and suicide (100%).

***Strengthening the Child Death Review Process*** Specific actions are listed in this chapter to strengthen the Child Death Review Process including strategies to improve data collection, analysis and reporting.

# CHAPTER 1-INTRODUCTION

This Child Death Review (CDR) Report presents findings on the deaths of children under 18 years of age between 2001-2006. Comprehensive reviews of deaths by local child death review teams were held in May 2003 through September 2009 to promote a better understanding and awareness of how to prevent child deaths in Hawaii.

The State of Hawaii has four counties: City and County of Honolulu (island of Oahu), Hawaii County (island of Hawaii), Maui County (islands of Maui, Molokai, and Lanai), and Kauai County (island of Kauai). According to the 2000 Census, the state population was 1,211,385; 72% (876,151) of Hawaii residents lived in the City and County of Honolulu, 12% (148,677) lived in Hawaii County, 11% (128,094) lived in Maui County, and 5% (58,463) lived in the least populated county of Kauai.[i] In 2002, 22.1% (284,692) children were under 18 years of age. Children were proportionately distributed among the four counties. The range was from 22.0% to 22.5%.

Hawaii's CDR is part of a network of CDR programs throughout the United States. The National Center for Child Death Review (NCCDR), funded by the Health Resources and Services Administration (HRSA), provides technical assistance and works with state programs to develop the Child Death Review Case Reporting System (CDRCRS) for data collection and dissemination of CDR findings. Many CDR programs in the U.S. promote the following guiding principles:

- Child deaths are sentinel events.
- Environmental, social, economic, health, and behavioral factors all affect a child's death.
- Reviews focus on the risk factors in child deaths and how these can be prevented, rather than who is at fault or should be blamed.
- Reviews are most able to identify risk factors and identify actions to prevent deaths when team membership is multidisciplinary.

# Overview of Child Death Review Program

Mission Statement: To reduce preventable child deaths through systematic multidisciplinary and inter-agency review of child deaths, from birth to under 18 years of age, in the State of Hawaii.[ii]

The State CDR Council adopted this mission statement in 1998. The objectives of the CDR Program[iii] include the following:

1. To establish and maintain a State CDR Council and Local CDR Teams.
2. To describe child death trends and patterns in Hawaii.
3. To analyze the causes and circumstances surrounding child deaths.
4. To make recommendations to prevent future child deaths based on risk factors.
5. To coordinate interdisciplinary training to reduce preventable deaths.
6. To promote community prevention education activities through collaborative partnerships.
7. To regularly evaluate the overall effectiveness of the CDR System.

***History and Purpose*** The CDR Program is the only statewide fatality review program that provides a systematic multidisciplinary and comprehensive review of factors that contribute to the deaths of resident and non-resident children, under the age of 18. The vision for CDR began in 1991 when the Department of Human Services requested that Child Welfare Services do retrospective reviews of deaths caused by child abuse and neglect. To support this request, the Hawaii State Legislature passed a resolution creating a task force to establish a multidisciplinary, multiagency CDR system. The Department of Health (DOH) established the CDR system in 1997 as a result of enabling legislation, Hawaii Revised Statutes § 321-341 through § 321-346. (Appendix A) The Hawaii Department of Health, Maternal and Child Health Branch (MCHB) is responsible for implementing these statutes.

***Organizational Structure*** The core of Hawaii's CDR is six regionally appointed groups of field professionals ("Local Teams") and the State CDR Council representing federal, state, and local agencies. Each Local Team meets periodically to review deaths, record findings, and suggest recommendations. State CDR Council members review these Local Team findings and recommendations to discuss opportunities for prevention and improvement in the system of care.

The Office of Health Status Monitoring (OHSM) is statutorily responsible for the registration of all births, deaths, and marriages that occur in the State of Hawaii. OHSM provides the CDR Program all death records of children under 18 years of age and selected information of children 0-3 years of age from their birth record.

The CDR Program is the responsibility of the MCHB. The MCHB personnel assigned to the CDR program include a full-time nurse coordinator and a part-time research statistician. The DOH's Family Health Services Division (FHSD) registered nurses from Hawaii, Kauai, and

Maui County District Health Offices serve as the CDR Local Team chairs for their communities. The DOH Public Health Nursing Branch and the Injury Prevention and Control Program also provide significant contributions to the program.

***The State CDR Council*** The council is a multiagency public-private collaboration tasked to identify system problems and make recommendations necessary for policy, procedural and/or legislative changes that will prevent future child deaths.

***Local Teams*** Local teams are comprised of multidisciplinary, interagency professionals appointed by their agencies or departments to review child deaths in their jurisdiction. Each county has a CDR team. The City and County of Honolulu has three CDR teams: Oahu 1 and Oahu 2 and a military team that reviews deaths among military dependents that occur in the state. Local team members represent the DOH (MCHB, Injury Prevention and Control Program, Public Health Nursing Branch, Child and Adolescent Mental Health), Department of Human Services (Child Welfare Services), Department of the Prosecuting Attorney, Emergency Medical Services, Medical Examiner/Coroner, Physician, Police Departments, and the Judiciary. Ad Hoc members include the following: consultants and other agencies such as the Department of Education, the Fire Department, and medical providers.

"The opportunity to formally review a child's death with local representatives from health and human services agencies at private, county and state levels is a privilege. It lets the team get to a depth and dimension of understanding circumstances surrounding the event, acts of omission (neglect) or commission (abuse) and other factors that may not be attainable in any other way. While local prevention efforts is a natural consequence after an accidental death, the review of other preventable deaths also brings to light prevention efforts within local systems of care that affects the quality of life for all."

Audrey Inaba, Maui CDR Team Coordinator

# Methods for Child Death Review

***Identifying Child Deaths*** OHSM provides demographic and death determination information to the Hawaii CDR Program a year or more after the end of a calendar year. Mortuaries record and report this child information on death certificates to OHSM.

During the period of this data collection, the process was as follows: (1) DOH staff screened annual data received from OHSM to identify cases to collect additional medical and specific information, (2) an underlying cause of death was assigned to these cases to distinguish risk factors concerning preventability and then referred for comprehensive review (Appendix B). Examples of deaths referred to local teams included homicide, fire, asphyxia, fall or crush, drowning, suicides, motor vehicle and other transport, and sudden unexplained deaths. It is important to note that the underlying causes of death used in CDR may not correspond to death certificates due to multiple causes.

***Child Death Review Information*** Prior to a local team review, team participants reviewed agency records for social, medical and legal histories, first responder data, law enforcement investigative data, medical examiner or coroner investigative data, judiciary and social services records. Additional agencies were contacted, as needed, including private providers and community services to obtain unique information related to the death or prevention initiatives. At case reviews, agency representatives shared information about the child, caregiver, incident, investigation, circumstances, and supervision at the time of death as well as prevention strategies. All participants were required to sign a confidentiality statement (Appendix C) since comprehensive team reviews are confidential and the meetings are not open to the public.

***Scope of the Data*** A workgroup of 30 CDR leaders from 19 states and the NCCDR designed and tested a standardized National CDR Case Reporting System (NCDR-CRS). The NCCDR launched this system in 2005 and now 35 additional states use it.[iv] However, two systems were used to record findings for the 372 comprehensively reviewed deaths in this report. There were 116 deaths recorded in the previous system that were migrated to NCDR-CRS. Consequently, some CDR information requested by the new form was not available and appears as missing data when entered in the NCDR-CRS. The current form is available on the web: www.childdeathreview.org.

***Data Limitations***

1. *Small Numbers*: While this report represents six years of data, the number of child deaths remains small. These small numbers limit statistical analysis and the ability to make definitive conclusions. Therefore, considerable caution should be exercised in the interpretation of data presented in this report.
2. *Missing data:* Several questions were impacted by missing data. Two options were available to report missing data, 'unknown' and 'blank'. The term 'unknown' was used when team members were unable to decide on a definite answer. The term

'blank' was used when there was insufficient information. Additionally, 'blanks' arise due to the migration of data from the previous system. For example, if an item was not included on the previous form used during the comprehensive review, there would be no way to add information to the current NCDR-CRS. In this report, all missing records were excluded from the calculation of percentages and rates. A data note is included to show the distribution of 'blank' and 'unknown' data, as the differentiation may have some significance to implementing strategies to improve future collection of data by agencies involved in CDR. As the proportion of observations with missing data increases, the validity of any interpretation of that data will decrease and be less representative of the population.

3. *Percentages and Burden*: Percentages were used to show the distribution of responses or characteristics. For example, it is useful to know that 24% of all deaths were to children 15-17 year of age. However, this limited information by itself does not allow a comparison to the expected burden based on the proportion of children in the population that were in this specific group. Combined with the fact that children 15-17 years of age made up 12% of the population, it can be interpreted that deaths to children 15-17 years of age were overrepresented in comparison to that age group in the general population. This can be interpreted as children 15-17 years of age had an increased burden of death. Conversely, those populations that were underrepresented would have a decreased burden of death. The interpretation of percentages should include awareness of missing or excluded data from its calculation.

4. *Rates:* The calculation of rates allowed the comparison among various subgroups to account for differences in the size of the specific subgroups. Non-residents do not have appropriate comparison data. Rates were not calculated for deaths that were comprehensively reviewed, due to limited ability to generalize the results and to determine accurate denominators. Rates should be interpreted cautiously since those that were based on a smaller number of events were less reliable than those based on a larger number of events.

5. *Ages:* The word child throughout this report encompasses the following five age groups: infants (under 1 year of age), 1-4 years of age, 5-9 years of age, 10-14 years of age and 15-17 years of age. Children under 1 year of age are described as infants throughout the report for simplicity. In instances of infant sleep related death, more detailed age categories are presented.

6. *Race/ethnicity*: The race/ethnicity of the child was obtained from the race/ethnicity group reported by the Hawaii Department of Health Office of Health Status Monitoring. The NCDR-CRS classified race/ethnicity using the race/ethnicity categories defined by the Office of Management and Budget standards established in 1997 to promote comparability of data among federal data systems.[v] The options from which to select one single race/ethnicity group included the following six race/ethnicity categories: White, Black, Asian, American Indian or Alaskan Native, Native Hawaiian, and Pacific Islander. Asian ethnic categorization was further segmented to report: Chinese, Filipino, Japanese, Korean, and other Asian. The

Native Hawaiian race/ethnicity category included both Hawaiian and part Hawaiian. Pacific Islander categorization included Samoan, Marshallese, Micronesian, Yapese, Chuukese, Pohnpeian, Kosraean, Palauan, Chamorro, Carolinian, Fijian, and Tongan children. OHSM categorized children with multiple race/ethnicities listed into a single race/ethnicity as follows: if a child has multiple race/ethnicities including Native Hawaiian, Native Hawaiian was the race/ethnicity selected; if the child has multiple race/ethnicities and is non-Hawaiian, the first non-white race/ethnicity listed was denoted as the race/ethnicity.[vi] In order to obtain comparable population estimates by race/ethnicity, data was taken from the 2003-2004 Hawaii Household Survey conducted by OHSM. This data varied significantly from the 2000 Census, which includes the option of belonging to more than one race group.

7. *County:* Both the county where the death occurred and the decedent's county of residence were reported. Military dependents that lived in Hawaii were considered residents. Non-residents included visitors and persons who were transported or travelled to Hawaii specifically for medical care.

Disclaimer: A single primary cause of death was selected by CDR as the cause that began the events resulting in death. Please note that the CDR process did not utilize ICD codes and may include changes to the primary and underlying causes of death provided to CDR by the Office of Health Status Monitoring. De-identified by Health Insurance Portability and Accountability Act of 1996 (HIPAA) standards mortality data is provided by multiple sources for the CDR review process.

# CHAPTER 2-CDR SUCCESS STORIES

The commitment and dedication of the local teams and the State CDR Council continues to sustain and improve the review process. CDR success stories reflect the multidisciplinary and interagency efforts of the program and resulting positive effect on Hawaii communities. A benchmark for Child Death Review programs is the Healthy People 2010 Initiative (Objective 15.6) concerning the review of deaths due to external (injury) causes. Hawaii, along with 37 other state CDR programs, began reporting this Healthy People 2010 measure in 2006. Hawaii was one of 23 states that reviewed more than 90% of these types of deaths. The following is a description of some examples of CDR success stories that have occurred.

## Improving Infant Death Investigations

The American Academy of Pediatrics released a policy in 1992, "The Changing Concept of Sudden Infant Death Syndrome: Diagnostic Coding Shifts, Controversies Regarding the Sleeping Environment, and New Variables to Consider in Reducing Risk". This policy, reaffirmed in January 2009, contains recommendations to prevent infant deaths.[vii] Certification of infant deaths has changed over time due to improvements in the standards for certification. In 2003, the CDC revised the Guidelines for Investigation of Infant Deaths. In March of 2006, a revised reporting form, Sudden Unexplained Infant Death Investigation (SUIDI) Reporting Form, was released. The CDC provided training on the SUIDI Reporting Form and guidelines for over 250 medical examiners, coroners, law enforcement officers, college faculty members, medico legal death investigators and child advocates to support the dissemination of information at conferences, meetings and courses locally. Five members of the Hawaii State CDR Council and local teams attended the fifth National SUIDI train-the-trainer academy in Seattle, Washington on May 12-15, 2008. The Hawaii team included two neighbor island police officials, a forensic pathologist, a board certified pediatrician with a subspecialty in forensic pediatrics and affiliation with the University of Hawaii, John A. Burns School of Medicine, and the CDR Nurse Coordinator. This team disseminated information to investigators, first responders, medical residents and police in Hawaii.

A panel comprised of the Hawaii Department of Health Newborn Metabolic Screening Program (NMSP), a forensic pathologist, and local team leader together provided a topical review of infant deaths due to metabolic disorders for the Hawaii State CDR Council. A need for improved communication among pathologists and the NMSP during infant death investigations was identified because of this CDR Council meeting. The NMSP and CDR program then mailed a letter with a NMSP practitioner manual to all registered pathologists in the State of Hawaii. This program information has implications for the use of DOH newborn metabolic screening results to support more accurate infant death certification as well as implications for families in prenatal or neonatal diagnosis in subsequent pregnancies.

## Improving Early Access to Prenatal Care

Pregnant women who have prenatal care are more likely to have healthy babies. Based on the results of a comprehensive team review during the reported review period, an agency was informed about the existence of a community based perinatal consortia. The sharing of this information resulted in an additional agency joining the Big Island Perinatal Health Disparities Project (BIPHDP) Consortia to form a stronger partnership.

## Keeping Children Safe on the Road

The Hawaii County CDR team reviewed motor vehicle related deaths. Requests for actions by the Hawaii Department of Transportation were made to improve road safety. The speed limit was reduced from 55 to 50 on Highway 190 and on other streets from 35 to 25 mph. New guardrails and reflective lights for the state highway in Puuanahulu were installed. A representative from a hospital on a local team arranged for visitors at the Hilo Medical Center to view health education messages about how to protect children from motor vehicle traffic deaths on the TV monitor in the hospital lobby.

## Providing Infants a Safe Sleep Environment

CDR collaborates with Safe Sleep Hawaii, which is under the leadership of Department of Health, Maternal and Child Health Branch and educates community organizations, healthcare professionals, and childcare facilities on safe sleep practices. A Safe Sleep Hawaii project to assist birthing hospitals with policy development, compliance and training has created systems change statewide. CDR findings were used in this effort. A DVD titled "Sudden Infant Death Syndrome (SIDS)" and an educational handout titled "Keep Me Safe While I Sleep" were developed for train-the-trainer programs and educational presentations. The flyer was translated into Chuukese, Marshallese and Spanish. Tips to promote a safe sleep environment including personal testimony from a grandfather are available on www.Safesleephawaii.org. Local team members encouraged agency distribution of these resources.

## Preventing Youth Suicide

Another CDR prevention partner is the Suicide Prevention Task Force under the DOH, Injury Prevention and Control Section (IPCS). IPCS staff shares information about resources with local teams. The Hawaii CDR Program and National Center for CDR presentation was included in the 2008 Suicide Prevention conference. In 2009, Hawaii received a SAMHSA grant for the Hawaii Gatekeeper Training Initiative to begin to improve program activity related to the early identification of youth at risk. Local CDR Team members participated in this training initiative.

## Collaborating to Prevent Domestic Violence

Domestic violence was a risk factor discussed during the reviews. The Hawaii State Coalition Against Domestic Violence was asked to join the Hawaii State CDR Council in 2003. This collaboration resulted in support for establishing a Domestic Violence Fatality Review Committee in Hawaii. Members of the CDR Council supported the DOH/MCHB to adopt a public health model to conduct domestic violence death reviews and collect data based on the established Child Death Review Model.

## Reducing Tobacco Exposure Risks

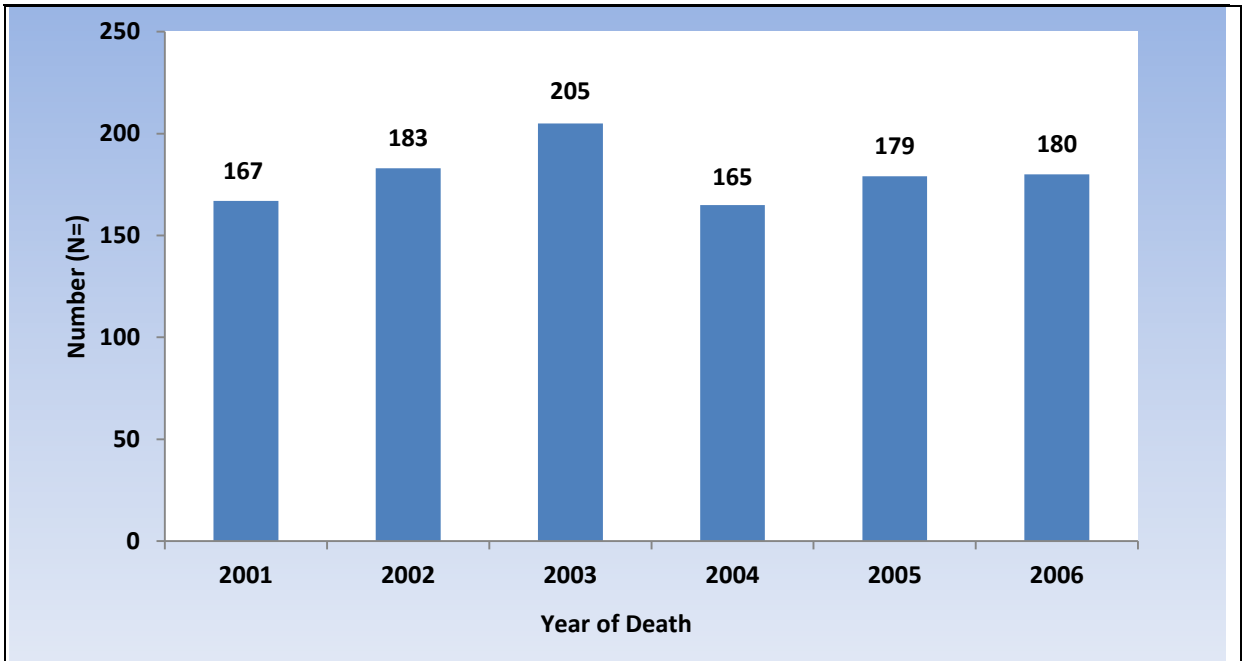
Infants who are exposed to tobacco during the prenatal period have a greater risk of death. In 2005, Hawaii CDR helped test the NCDR-CRS, a data collection form that added a question for smoking during pregnancy. The American Legacy Foundation develops programs that address the health effects of tobacco, including programs to keep teens from ever smoking. In 2010, the Hawaii Tobacco Prevention Program asked the CDR Program to review the American Legacy Foundation message for pregnant women. This collaboration resulted in an improved public message — deciding not to smoke will reduce not just the risk of SIDS but also the risk of Sudden Unexpected Infant Death. The message was displayed on a bus poster to which 265,000 Honolulu riders were exposed, weekly.

# CHAPTER 3-ALL CHILD DEATHS

Child deaths are sentinel events signaling a need for investigation or response. All child deaths that occurred in Hawaii including both resident and non-resident are reported in this chapter to allow comparison to deaths comprehensively reviewed by local teams. Information compared in this report includes demographics, such as residence, race/ethnicity, age, gender, manner and the primary cause of death.

The DOH-FHSD Medical Director and team leaders reviewed select death certificate information for resident and non-resident child deaths. Detailed information, beyond that available from death certificates, was shared at local team reviews. Figure 1 presents the total number of child deaths per year for the data included in this report.

**Figure 1. Child Deaths by Year in Hawaii, 2001-2006 (N=1,079)**



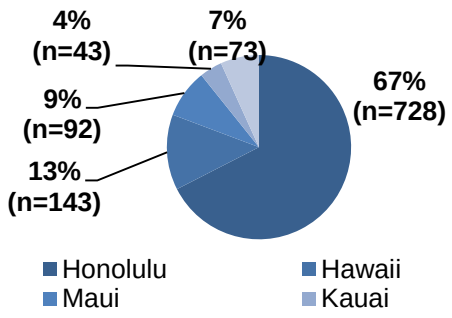

**Source:** State of Hawaii, Office of Health Status Monitoring. **Data Note:** Figure includes resident and non-resident deaths.

Between 2001 and 2006, there were 1,079 deaths among children under 18 years of age in the State of Hawaii.

# Demographics

***Residence*** The population of children in the State of Hawaii including children of military personnel stationed in Hawaii and residents temporarily absent increased slightly (1%) from 2000 to 2006.[viii] It is important to separate deaths by residency to assure county specific actions may be taken when warranted. Figure 2 shows the total child deaths (1,079) occurring between 2000 and 2006, by the county of residence.

**Figure 2. Child Deaths by County of Residence in Hawaii, 2001-2006 (N=1,079)**




Of 1,079 deaths, information on county of residence was available for all. Of these 1,079 deaths, 67% (n=728) were Honolulu County residents, 13% (n=143) were Hawaii County residents, 9% (n=92) were Maui County residents, 4% (n=43) were Kauai County residents, and 7% (n=73) were residents from outside of the State of Hawaii (hereafter referred to as non-residents).

**Source:** State of Hawaii, Office of Health Status Monitoring. **Data Note:** Figure includes resident and non-resident deaths. Summation of percentages may not total 100% due to rounding.

***Race/ethnicity*** Hawaii is among the most diverse states with no racial group representing a clear majority. Hawaii consists of a relatively large proportion of Native Hawaiians, Asians, and Pacific Islanders that are not commonly reported individually in most national reports. For example, an estimated 60% of the entire population of Native Hawaiians in the U.S. lived in Hawaii, but this is slowly decreasing due to Hawaii's high cost of living and limited economic opportunities.[ix] Therefore, Native Hawaiians, individual Asian subgroups and Pacific Islanders are populations of particular interest in Hawaii. Deaths may vary by race/ethnicity. A study on mortality patterns of Native Hawaiians, found an elevated pattern of mortality risk for Native Hawaiians across the lifespan. Among Native Hawaiian children under one year of age, deaths were 50% higher than for White children under one year of age.[x]

Table 1 shows the child deaths occurring in Hawaii between 2001 and 2006, by residence and race/ethnicity. The table compares numbers, percentages and rate of deaths by race/ethnicity and residency.

**Table 1. Child Death Rate by Race/ethnicity (per 100,000) in Hawaii, 2001-2006 (N=1,079)**

| Race/ethnicity | Number of Deaths | Number of Non-Resident Deaths | Percent of Non-Resident Deaths | Number of Resident Deaths | Percent of Resident Deaths | Estimated Annual Population | Hawaii Rate (per 100,000) |
|---|---|---|---|---|---|---|---|
| Native Hawaiian | 421 | 3 | 4% | 418 | 42% | 93,357 | 74.6 |
| Asian | 295 | 16 | 22% | 279 | 28% | 114,785 | 40.5 |
| *Chinese* | 22 | 2 | 3% | 20 | 2% | 15,391 | 21.7 |
| *Filipino* | 151 | 2 | 3% | 149 | 15% | 52,320 | 47.5 |
| *Japanese* | 100 | 11 | 15% | 89 | 9% | 39,865 | 37.2 |
| *Korean* | 8 | 1 | 1% | 7 | 1% | 3,502 | 33.3 |
| *Other Asian* | 14 | 0 | 0% | 14 | 1% | 3,707 | 62.9 |
| White | 151 | 16 | 22% | 135 | 13% | 44,742 | 50.3 |
| Pacific Islander | 123 | 25 | 34% | 98 | 10% | 13,937 | 117.2 |
| Black | 69 | 12 | 16% | 57 | 6% | 8,899 | 106.8 |
| American Indian | 8 | 1 | <1% | 7 | 1% | 4,860 | 24.0 |
| Other | 11 | 0 | 0% | 11 | 1% | 12,695 | 14.4 |
| Total | 1,078 | 73 | 100% | 1,005 | 100% | 293,275 | 57.1 |

**Source:** State of Hawaii, Office of Health Status Monitoring. Estimated annual population estimates were from OHSM 2003-2004 Hawaii Household Survey, children under 18 years of age. **Data Note:** Number of deaths includes resident and non-resident deaths, but numbers for non-residents are suppressed. For race/ethnicity, 1 death was indicated as unknown. Hawaii rate was based on resident deaths. Summation of percentages may not total 100% due to rounding.

Of the 1,079 child deaths, race/ethnicity information was available for nearly all (n=1,078). Of these 1,078 deaths, 7% (n=73) were non-residents. Of these 73 non-resident deaths, 34% (n=25) were Pacific Islander, 22% (n=16) were Asian, 22% (n=16) were White, and 16% (n=12) were Black. Of the 1,005 resident deaths:

- 42% (n=418) were Native Hawaiian;
- 28% (n=279) were Asian;
- 13% (n=135) were White;
- 10% (n=98) were Pacific Islander.

The rate of child death for all race/ethnicities among residents was 57.1 deaths per 100,000 children. The death rates reported herein are presented per 100,000 children within each race/ethnicity group. Pacific Islander (117.2) children had the highest resident death rate, followed by Black (106.8), Native Hawaiian (74.6), White (50.3), and the composite Asian group, (40.5). Among Asian subgroups, "Other Asian" and Filipino had higher rates than the overall rate for the composite Asian group, while Chinese, Korean, and Japanese had lower rates.

***Age*** The incident of deaths varied by age with more children dying during the first year of life than at other ages. The infant mortality rate in the U.S. decreased slightly from 6.8 per 1,000 live births in 2001 to 6.7 in 2006.[xi] The U.S. infant mortality rate ranked 28th among industrialized nations in a report on international infant mortality rates.[xii] Table 2 shows the child death rate in Hawaii between 2001 and 2006 according to age, resident population, estimated annual population, Hawaii rate and the U.S. rate.

**Table 2. Child Death Rate by Age (per 100,000) in Hawaii and the U.S., 2001-2006 (N=1,079)**

| Age(Years) | Number of Deaths | Number of Non-Resident Deaths | Percent of Non-Resident Deaths | Number of Resident Deaths | Percent of Resident Deaths | Estimated Annual Population | Hawaii Rate (per 100,000) | U.S. Rate (per 100,000) |
|---|---|---|---|---|---|---|---|---|
| Infant | 699 | 39 | 53% | 660 | 66% | 15,464 | 711.3 | 738.1 |
| 1-4 | 120 | 6 | 8% | 114 | 11% | 62,699 | 30.3 | 31.6 |
| 5-9 | 53 | 5 | 7% | 48 | 5% | 84,980 | 9.4 | 14.2 |
| 10-14 | 87 | 9 | 12% | 78 | 8% | 83,103 | 15.6 | 18.9 |
| 15-17 | 120 | 14 | 19% | 106 | 11% | 49,518 | 35.7 | 53.1 |
| Total | 1,079 | 73 | 100% | 1,006 | 100% | 295,764 | 56.7 | 63.8 |

**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics (NCHS) Compressed Mortality File 1999-2006. CDC WONDER On-line Database compiled from Compressed Mortality File 1999-2006 Series 20 No. 2L, 2009. Accessed at http://wonder.cdc.gov/cmf-icd10.html on Oct 19, 2009. Estimated Annual Population estimates were from the 2000 Census for the State of Hawaii, children under 18 years of age. **Data Note:** Number of deaths includes resident and non-resident deaths. Summation of percentages may not total 100% due to rounding. Hawaii rates were based on resident deaths. U.S. rates were calculated from CDC, NCHS Mortality files.

Of the 1,079 deaths, age information was available for all. Of these 1,079 deaths, 7% (n=73) were non-residents. Of these 73 non-resident deaths, 53% (n=39) were infants, 19% (n=14) were children 15-17 years of age, and 12% (n=9) were children 10-14 years of age. Of the 1,006 resident deaths:

- 66% (n=660) were infants;
- 11% (n=114) were children 1-4 years of age;
- 11% (n=106) were children 15-17 years of age.

The child death rate for all ages in Hawaii was 56.7 per 100,000 children, which was lower than the U.S. rate of 63.8. Infants had the highest child death rate in Hawaii (711.3) and the U.S. (738.1) followed by children 15-17 years of age in Hawaii (35.7) and U.S. (53.1). For both Hawaii and the U.S., children 5-9 years of age had the lowest child death rate (Hawaii = 9.4, and U.S. = 14.2).

***Gender*** Generally, U.S. child death rates were higher for males than females in 2006.[xiii] Gender may be a factor associated with child death. Table 3 shows the child death rate by gender between 2001 and 2006 in Hawaii, for the resident and non-resident population.

**Table 3. Child Death Rate by Gender (per 100,000) in Hawaii, 2001-2006 (N=1,076)**

| Gender | Number of Deaths | Number of Non-Resident Deaths | Percent of Non-Resident Deaths | Number of Resident Deaths | Percent of Resident Deaths | Estimated Annual Population | Hawaii Rate (per 100,000) |
|---|---|---|---|---|---|---|---|
| Male | 630 | 37 | 51% | 593 | 59% | 125,225 | 78.9 |
| Female | 446 | 36 | 49% | 410 | 41% | 143,542 | 47.6 |
| Total | 1,076 | 73 | 100% | 1,003 | 100% | 295,764 | 56.7 |

**Source:** Hawaii Department of Health, Office of Health Status Monitoring. Annual population estimates were from the 2000 Census for the State of Hawaii, children under 18 years of age. **Date Note:** Number of deaths includes resident and non-resident deaths. For gender, 2 deaths were blank and 1 death was indicated as unknown. Summation of percentages may not total 100% due to rounding.Hawaii rate was based on resident deaths.

Of the 1,079 deaths, gender information was available for nearly all (n=1,076). Of these 1,076 deaths, 7% (n=73) were non-residents of Hawaii. Of the 73 non-resident deaths, 51% (n=37) were male and 49% (n=36) were female. Of the 1,003 resident deaths:

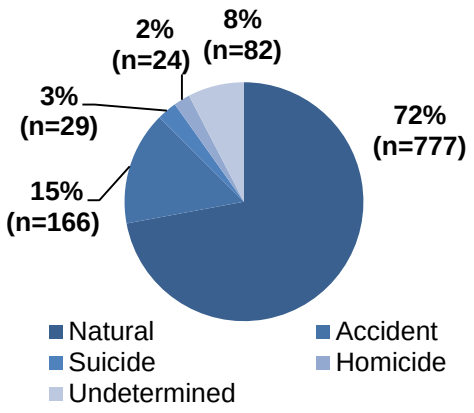
- 59% (n=593) were male;
- 41% (n=410) were female.

The child death rate for male residents was 78.9 deaths per 100,000 children compared to a rate of 47.6 for female residents.

# Manner and Primary Cause of Death

***Manner of Death*** The manner of death was obtained from vital records data. In some cases, the manner of death was determined by autopsy and investigation of the circumstances of deathas or was conductedbythe coroner or medical examiner. A death was classified as undetermined (or "could not be determined") when information pointing to one manner of death was no more compelling than one or more other manners of death.[xiv] Figure 3 depicts the manner of death in Hawaii between 2001 and 2006 using five standard categories: natural deaths, accidents, homicides, suicides and undetermined causes.

**Figure 3. Child Deaths by Manner of Death in Hawaii, 2001-2006 (N=1,078)**




Of the 1,079 deaths, manner of death information was available for nearly all (n=1,078). Of these 1,078 deaths, 72% (n=777) were natural, 15% (n=166) were accidental, 8% (n=82) were undetermined, 3% (n=29) were suicides and 2% (n=24) were homicides.

**Source:** State of Hawaii, Office of Health Status Monitoring. **Data Note:** Figure includes resident and non-resident deaths. For manner of death, 1 death was indicated as unknown. Summation of percentages may not total 100% due to rounding.

***Primary Cause of Death*** The primary cause of death[xv] and circumstances of death were determined during the CDR process from sources other than vital records, such as autopsy reports. While more than one cause of death may be reported in vital records as an underlying cause of death, only one primary cause of death, such as injury (external), medical, undetermined injury or medical, or unknown were assigned in the CDR process. Table 4 shows the primary cause of death in Hawaii between 2001 and 2006.

**Table 4. Child Deaths by Primary Cause of Death in Hawaii, 2001-2006 (N=920)**

| Primary Cause of Death | | Number of Deaths | Percent of Deaths |
|---|---|---|---|
| **Injury (external)** | Injury (external) | 280 | 30% |
| | Motor vehicle and other transport | 91 | 10% |
| | Asphyxia | 58 | 6% |
| | Undetermined | 52 | 6% |
| | Drowning | 32 | 3% |
| | Weapon (including use of a body part) | 20 | 2% |
| | Fall or crush | 13 | 1% |
| | Fire, burn or electrocution | 4 | <1% |
| | Poisoning, overdose, or acute intoxication | 2 | <1% |
| | Animal bite or attack | 2 | <1% |
| | Exposure | 1 | <1% |
| | Other | 2 | <1% |
| | Unknown | 3 | <1% |
| **Medical** | Medical | 626 | 68% |
| | Prematurity | 334 | 36% |
| | Congenital anomaly | 71 | 8% |
| | Cardiovascular | 61 | 7% |
| | Pneumonia | 32 | 3% |
| | Cancer | 28 | 3% |
| | Other infection | 23 | 3% |
| | SIDS | 12 | 1% |
| | Undetermined | 5 | 1% |
| | Neurological | 3 | <1% |
| | Other perinatal condition | 12 | 1% |
| | Other medical condition | 44 | 5% |
| | Unknown | 1 | <1% |
| **Undetermined if injury (external) or medical** | | 14 | 2% |
| **Total** | | 920 | 100% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Number of deaths includes resident and non-resident deaths. For primary cause of death, 154 deaths were blank and 5 deaths were indicated as unknown. Summation of percentages may not total 100% due to rounding.

Of the 1,079 deaths, the primary cause of death information was available for 85% (n=920). Of these 920 deaths the primary cause of death for:

- 30% (n=280) were injury (external);
- 68% (n=626) were medical;
- 2% (n=14) were undetermined if injury or medical.

Among the 920 deaths, the leading injury (external) primary cause of death included:

- 10% (n=91) which were motor vehicle or other transport related;
- 6% (n=58) which were asphyxia;
- 6% (n=52) which were undetermined injury;
- 3% (n=32) whichwere drowning.

Examination of child deaths within the injury category (n=280), one-third (33%) were related to motor vehicle and other transport, 21% were due to asphyxia and 19% were undetermined.

Among the 920 deaths, the leading medical primary cause of death included:

- 36% (n=334) which were prematurity;
- 8% (n=71) which were congenital anomalies;
- 7% (n=61) which were cardiovascular;
- 3% (n= 32) whichwere pneumonia.

Examination of child deaths within the medical category (n=626), more than one-half (53%) were due to prematurity, followed by 11% due to congenital anomalies and 10% due to a cardiovascular problem. Of the 154 deaths with no primary cause of death, all were medical with multiple contributing causes of death that did not meet the criteria for a comprehensive review. Of these 154 deaths, 153 occurred in 2001-2003 and one death occurred in 2006.

# CHAPTER 4-COMPREHENSIVELY REVIEWED CHILD DEATHS

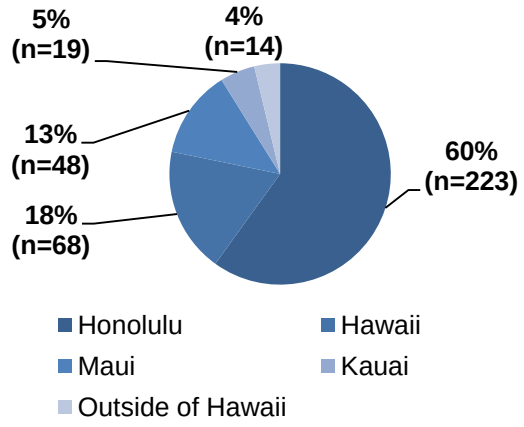
Local teams reviewed the factors that contribute to the death of children. Of the 1,079 deaths that occurred between 2001 and 2006, 34% (n=372) were comprehensively reviewed. This represents approximately one-third of all child deaths per year with a comprehensive review (range: 31% -39%). Examples of deaths referred to a local team for a comprehensive team include those related to infant sleep or a sleep environment, motor vehicle and other transport deaths, asphyxia, drowning, suicide, homicide, weapon, fall or crush deaths, and other deaths with elements of preventability identified. This chapter presents demographics, the manner and primary cause of death, child information, place of incident, caregiver, supervisor, acts of omission (neglect) and commission (abuse) that caused or contributed to the death, and determination of preventability.

## Demographics

The data in this section includes residence, race/ethnicity, age and gender. When possible, data was compared with the overall resident population to describe the burden of child death.

***Residence*** Figure 4 shows the child deaths between 2001 and 2006 according to residence.

**Figure 4. Child Deaths by County of Residence in Hawaii, Comprehensively Reviewed, 2001-2006 (N=372)**




Of the 372 deaths comprehensively reviewed, county of residence information was available for all. Of these 372 deaths, 60% (n=223) were Honolulu County residents, 18% (n=68) were Hawaii County residents, 13% (n=48) were Maui County residents, 5% (n=19) were Kauai County residents, and 4% (n=14) were non-residents.

**Source:** State of Hawaii, Office of Health Status Monitoring. **Data Note:** Figure includes resident and non-resident deaths. Summation of percentages may not total 100% due to rounding.

***Race/ethnicity*** Table 5 shows the child deaths between 2001 and 2006 by racial/ethnic categories in Hawaii.

**Table 5. Child Deaths by Race/ethnicity in Hawaii, Comprehensively Reviewed, 2001-2006 (N=371)**

| Race/ethnicity | Number of Deaths | Number of Non-Resident Deaths | Percent of Non-Resident Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|---|
| Native Hawaiian | 169 | 0 | 0% | 169 | 47% | 32% |
| Asian | 88 | 4 | 29% | 84 | 24% | 39% |
| *Chinese* | 5 | 0 | 0% | 5 | 1% | 5% |
| *Filipino* | 47 | 1 | 7% | 46 | 13% | 18% |
| *Japanese* | 29 | 2 | 14% | 27 | 8% | 14% |
| *Korean* | 4 | 1 | 7% | 3 | 1% | 1% |
| *Other Asian* | 3 | 0 | 0% | 3 | 1% | 1% |
| White | 60 | 8 | 57% | 52 | 15% | 15% |
| Pacific Islander | 35 | 1 | 7% | 34 | 10% | 5% |
| Black | 16 | 1 | 14% | 15 | 4% | 3% |
| American Indian | 3 | 0 | 0% | 3 | 1% | .1% |
| Other | 0 | 0 | 0% | 0 | 0% | 4% |
| Total | 371 | 14 | 100% | 357 | 100% | 100% |

**Source:** National Center for Child Death Review Case Reporting System. Resident population estimates were from OHSM 2003-2004 Hawaii Household Survey, children under 18 years of age. **Data Note:** Number of deaths includes resident and non-resident deaths, but numbers for non-residents are not displayed due to small numbers of cases. For race/ethnicity, 1 death was indicated as unknown.Summation of percentages may not total 100% due to rounding.

Of the 372 deaths comprehensively reviewed, race/ethnicity information was available for nearly all (n=371). Among the 357 resident deaths:

- 47% (n=169) were Native Hawaiian;
- 24% (n=84) were Asian;
- 15% (n=52) were White;
- 10% (n=34) were Pacific Islander;
- 4% (n=15) were Black.

The proportion of Pacific Islander resident deaths was double the respective percent of resident population (5%). The proportion of Native Hawaiian resident deaths was greater than the respective resident population (32%). The proportion of White resident deaths was the same as the respective resident population (15%); whereas, the proportion of Asian resident deaths was much lower than the respective resident population (39%). Within the Asian subgroups, Filipino, Japanese, and Chinese had lower proportions while Korean and "Other Asian" had the same as the respective resident populations.

***Age*** Table 6 shows the child deaths between 2001 and 2006 by age.

**Table 6. Child Deaths by Age in Hawaii, Comprehensively Reviewed, 2001-2006 (N=372)**

| Age (Years) | Number of Deaths | Number of Non-Resident Deaths | Percent of Non-Resident Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|---|
| Infant | 156 | 1 | 7% | 155 | 43% | 5% |
| 1-4 | 67 | 2 | 14% | 65 | 18% | 21% |
| 5-9 | 17 | 2 | 14% | 15 | 4% | 29% |
| 10-14 | 44 | 5 | 36% | 39 | 11% | 28% |
| 15-17 | 88 | 4 | 29% | 84 | 23% | 17% |
| Total | 372 | 14 | 100% | 358 | 100% | 100% |

**Source:** National Center for Child Death Review Case Reporting System. Resident population estimates were from the 2000 Census for the State of Hawaii, children under 18 years of age. **Data Note:** Number of deaths includes resident and non-resident deaths, but non-residents death numbers are not displayed due to small numbers of cases. Summation of percentages may not total 100% due to rounding.

Of the 372 deaths comprehensively reviewed, age information was available for all. Of the 358 resident deaths:

- 43% (n=155) were infants;
- 23% (n=84) were children 15-17 years of age;
- 18% (n=65) were children 1-4 years of age.

The proportion of resident deaths of infants and children 15-17 years of age was greater than the respective percent of resident populations (infants=5%, and 15-17 years of age =17%). For the other age groups, the proportion of resident deaths was lower than the respective percent of resident populations for all other age groups in Hawaii. Overall, the number of infant deaths reviewed by local teams was greater than other age groups combined.

***Gender*** Table 7 shows the number of child deaths by gender in Hawaii between 2001 and 2006.

**Table 7. Child Deaths by Gender in Hawaii, Comprehensively Reviewed, 2001-2006 (N=372)**

| Gender | Number of Deaths | Number of Non-Resident Deaths | Percent of Non-Resident Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|---|
| Male | 237 | 7 | 50% | 230 | 64% | 52% |
| Female | 135 | 7 | 50% | 128 | 36% | 48% |
| Total | 372 | 14 | 100% | 358 | 100% | 100% |

**Source:** Hawaii Department of Health, Office of Health Status Monitoring. Resident population estimates were from the 2000 Census for the State of Hawaii, children under 18 years of age. **Date Note**: Number of deaths includes resident and non-resident deaths. Summation of percentages may not total 100% due to rounding.

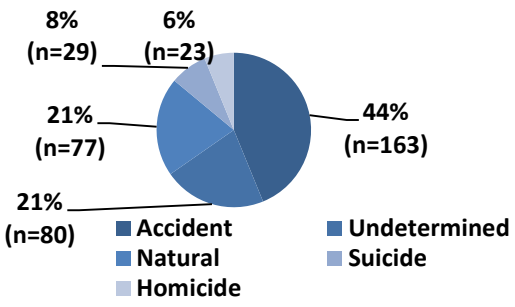
Of the 372 deaths comprehensively reviewed, gender information was available for all. Of the 14 non-resident deaths 50% (n=7) were male and 50% (n=7) were female. Of the 358 resident deaths, 64% (n=230) were male and 36% (n=128) were female.

The proportion of male resident deaths was greater than the respective percent of resident population (52%). The proportion of female resident deaths was lower than the respective resident population (48%). Overall, the number of deaths reviewed by local teams for males was nearly double the number of deaths for females.

# Manner and Primary Cause of Death

***Manner of Death*** Figure 5 depicts the manner of child deaths between 2001 and 2006 for five categories: accidental, natural, homicide, suicide and undetermined.

**Figure 5. Child Deaths by Manner of Death in Hawaii, Comprehensively Reviewed, 2001-2006 (N=372)**




Of 372 deaths comprehensively reviewed, manner of death information was available for all. Of these deaths, 44% (n=163) were accident, 21% (n=80) undetermined, 21% (n=77) natural, 8% (n=29) suicide, and 6% (n=23) homicide.

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths.

***Primary Cause of Death*** Table 8 shows the primary cause of child death between 2001 and 2006 resulted from injury or medical causes.

**Table 8. Child Deaths by Primary Cause of Death in Hawaii, Comprehensively Reviewed, 2001-2006 (N=368)**

| Primary Cause of Death | | Number of Deaths | Percent of Deaths |
|---|---|---|---|
| **Injury (external)** | Injury (external) | 275 | 75% |
| | Motor vehicle and other transport | 91 | 25% |
| | Asphyxia | 58 | 16% |
| | Undetermined | 51 | 14% |
| | Drowning | 29 | 8% |
| | Weapon (including use of a body part) | 19 | 5% |
| | Fall or crush | 13 | 4% |
| | Fire, burn or electrocution | 4 | 1% |
| | Poisoning, overdose, or acute intoxication | 2 | 1% |
| | Animal bite or attack | 2 | 1% |
| | Exposure | 1 | 0% |
| | Other | 2 | 1% |
| | Unknown | 3 | 1% |
| **Medical** | Medical | 79 | 21% |
| | Pneumonia | 18 | 5% |
| | SIDS | 12 | 3% |
| | Cardiovascular | 9 | 2% |
| | Congenital anomaly | 7 | 2% |
| | Other infection | 7 | 2% |
| | Undetermined medical | 5 | 1% |
| | Prematurity | 2 | 1% |
| | Neurological | 2 | 1% |
| | Other perinatal condition | 1 | 0% |
| | Other medical condition | 16 | 4% |
| **Undetermined if injury (external) or medical** | | 14 | 4% |
| **Total** | | 368 | 100% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Number of deaths includes resident and non-resident deaths. For primary cause of death, 1 death was blank and 3 deaths were indicated as unknown. Summation of percentages may not total 100% due to rounding.

Of the 372 deaths comprehensively reviewed, primary cause of death information was available for nearly all (n=368). Of these 368 deaths the primary cause of death for:

- 75% (n=275) were injury (external);
- 21% (n=79) were medical;
- 4% (n=14) were undetermined if injury or medical.

Of these 368 deaths, the leading injury (external) primary cause of death included:

- 25% (n=91) were motor vehicle and other transport;
- 16% (n=58) were asphyxia;
- 14% (n=51) were undetermined;
- 8% (n=29) were drowning;
- 5% (n=19) were weapon related;
- 4% (n=13) were a crush or fall.

Examination of child deaths within the injury category (n=275), one-third 33%) were related to motor vehicle and other transport, 21% were due to asphyxia and 19% were undetermined.

Of 368 deaths, the leading medical primary cause of death included:

- 5% (n=18) were pneumonia;
- 3% (n=12) were Sudden Infant Death Syndrome (SIDS);
- 2% (n=9) were cardiovascular;
- 2% (n=7) were congenital anomalies;
- 2% (n=7) were other infection.

Examination of child deaths within the medical category, almost one in four (23%) were due to pneumonia, followed by 15% due to SIDS.

Nearly all of the cases with an external injury primary cause of death (275 out of 280) were reviewed while significantly lower representations of deaths were attributed to a medical primary cause of death (79 of 626). This is likely due to an emphasis on preventable primary causes of death in the review criteria. There were 707 deaths not comprehensively reviewed by local teams. Nearly all these deaths (n=702) had a medical primary cause of death where contributing factors were not deemed preventable.

# Child Information

Local teams collected child information during comprehensive reviews. This section includes the type of residence, health insurance, chronic illness or disability, history of substance abuse, toxicology screens, problems in school, history of child maltreatment, child ever placed outside of the home, and delinquent or criminal history. It is important to look at these factors, as they influence child safety.

***Type of Residence*** It is important to look at the type of residence because the physical and family environment provide context for health and safety. The Child Death Review Case Reporting System (CDR-CRS) Dictionary defined type of residence as the place where the child lived a majority of the time. There may be differences in determining the type of residence when parents and relatives shared a home. Table 9 shows the number and percentage of child deaths that occurred between 2001 and 2006 according to the type of residence.

**Table 9. Child Deaths by Type of Residence in Hawaii, Comprehensively Reviewed, 2001-2006 (N=310)**

| Type of Residence | Number of Deaths | Percent of Deaths |
|---|---|---|
| Parentalhome | 250 | 81% |
| Relative home | 22 | 7% |
| Licensed group or foster home/relative foster home | 14 | 5% |
| Shelter, homeless or other setting | 24 | 8% |
| Total | 310 | 100% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Number of deaths includes resident and non-resident deaths. For type of residence, 47 deaths were blank and 15 deaths were indicated as unknown. Summation of percentages may not total 100% due to rounding.

Of the 372 deaths comprehensively reviewed, the type of residence information was available for 83% (n=310). Of 310 deaths with type of residence reported:

- 81% (n=250) was the parental home;
- 7% (n=22) was a relative home;
- 5% (n=14) was a licensed group, foster home or relative foster home;
- 8% (n=24) lived in a shelter, were homeless or other settings.

Examples of other settings included room rental, lodging for visitors, a friend's home, a long-term hospital, skilled nursing facility, adoptive home and no home as the child had run away from home.

***Health Insurance*** It is important to look at health insurance as a factor when reviewing child deaths because health insurance increases access to health care services. A higher proportion of children from birth through 18 years of age in Hawaii (94.8 %) had insurance than in the U.S. (91.2%) in 2005. Among all children in Hawaii during 2006, (5.6%) children were uninsured, (31%) children were enrolled in Medicaid, (9%) children were enrolled in the Children's Health Insurance Program (CHIP) and the majority (55%) had private insurance.[xvi] CDR reports health insurance as obtained from various agencies at CDR meetings. Table 10 shows the health insurance of the children who died in Hawaii between 2001 and 2006.

**Table 10. Child Deaths by Health Insurance in Hawaii, Comprehensively Reviewed, 2001-2006 (N=202)**

| Health Insurance | Number of Deaths | Percent of Deaths |
|---|---|---|
| Medicaid/state plan | 125 | 62% |
| Private | 51 | 25% |
| Other | 23 | 11% |
| None | 6 | 3% |

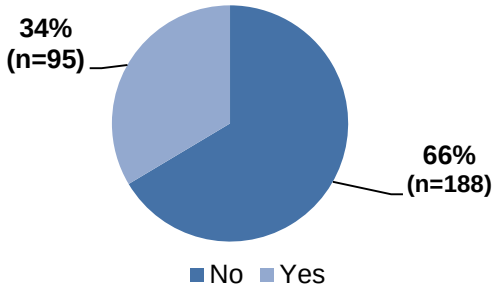
**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Number of deaths includes resident and non-resident deaths. For health insurance, 69 deaths were blank and 101 deaths were indicated as unknown. More than one health insurance could be selected so the summation of the individual percents in the table will exceed 100%. Three deaths had more than one health insurance selected.

Of the 372 deaths comprehensively reviewed, health insurance information was only available for 54% (n=202). Coverage provided by the Military was included in other category. Of the 202 children with health insurance reported:

- 62% (n=125) had Medicaid/state;
- 25% (n=51) had private;
- 11% (n=23) had other;
- 3% (n=6) had none.

***Disability or Chronic Illness*** It is important to look at disability or chronic illness because these conditions may increase caregiver burden and place children at a higher risk for injury. From 2005 to 2006, the prevalence of children with special health care needs in Hawaii was estimated to be 12%.[xvii] The CDR-CRS Dictionary includes disability or chronic illness when it occurred prior to the time of incident. A chronic illness or condition is an impairment or illness that has a substantial long-term effect on the child's day-to-day function or health. CDR reported disability or chronic illness as obtained from various agencies at CDR meetings. Agencies had different ways of reporting these conditions. Combining conditions that are defined and reported differently made the collection of this data a challenge and interpretation difficult. Figure 6 shows the deaths between 2001 and 2006 for disabled or chronically ill children.

**Figure 6. Deaths of Children Who had Disability or Chronic Illness in Hawaii, Comprehensively Reviewed, 2001-2006 (N=283)**




Of the 372 deaths comprehensively reviewed, disability or chronic illness information was available for 76% (n=283). Of these 283 deaths, 34% (n=95) had a disability or chronic illness reported and 66% (n=188) did not have a disability or chronic illness reported.

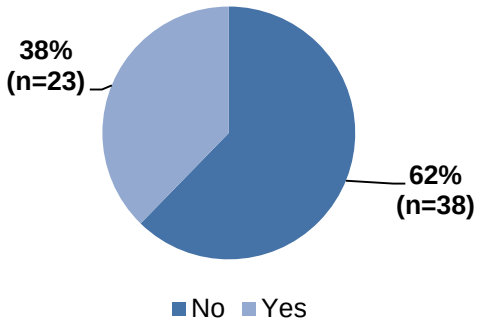
**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For disability or chronic Illness, 45 deaths were blank and 44 deaths were indicated as unknown. Summation of percentages may not total 100% due to rounding.

Of the 95 children with a disability or chronic illness, information on type of disability or chronic illness was available for 97% (n=92); 2 deaths were blank and 1 death was indicated as unknown. More than one physical disability or chronic illness was reported for 8 children. Of the 92 children with disability or chronic illness reported:

- 83% (n=76) had a physical disability or chronic illness;
- 25% (n=23) had a mental disability or chronic illness;
- 2% (n=2) had a sensory disability or chronic illness.

***Substance Abuse History*** Substance abuse may cause negative interactions and disorganization resulting in increased risk taking by persons who abuse substances. Among children 12- 17 years of age in the U.S. in 2004, 10.6% reported using illicit drugs.[xviii] According to the Youth Risk Behavior Survey, female and male students in grades 9-12 living in Hawaii had higher reports in 2005 for youth riding in a vehicle driven by someone who had been drinking alcohol.[xix] The CDR-CRS Dictionary includes history of substance abuse when the child was perceived by self or others to have a problem with, or to be addicted to, alcohol or other drugs. CDR reported substance abuse by children 10-17 years of age as obtained from various agencies at CDR. Information about this risk factor might be under reported due to the lack of standards among agencies for assessing substance abuse among children 10-17 years of age. Figure 7 shows the child deaths between 2001 and 2006 with a history of substance abuse.

**Figure 7. Child Deaths by History of Substance Abuse by Children 10-17 Years of Age in Hawaii, Comprehensively Reviewed, 2001-2006 (N=61)**




Of the 132 deaths in children 10-17 years of age comprehensively reviewed, history of substance abuse information was available for 69% (n=61). Of these 61 deaths, 38% (n=23) had a history of substance abuse. There was no history of substance abuse among 62% (n=38) children 10-17 years of age. **Note-missing information, interpret with caution.**

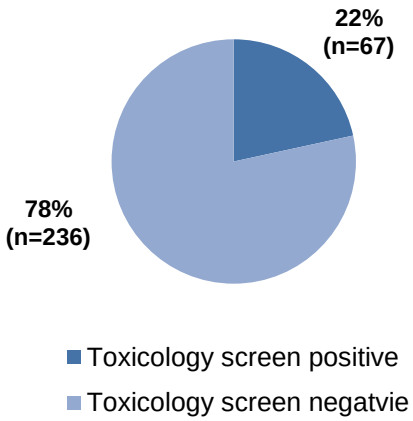
**Source:** State of Hawaii, National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For history of substance abuse by children 10-17 years of age, 30 deaths were blank and 41 deaths were indicated as unknown. Summation of percentages may not total 100% due to rounding.

Of the 23 children 10-17 years of age who had a history of substance abuse, information on type of substance was available for 96% (n=22); 1 death was indicated as unknown. More than one type of substance was reported for 10 children. These estimates were probably under reported, as it was difficult to gather specific information related to substance abuse in children. Of the 22 children with substance abuse reportedly:

- 64% (n=14) had a history of marijuana abuse;
- 55% (n=12) had a history of alcohol abuse;
- 27% (n=6) had a history of abusing other drugs (includes methamphetamine).

***Toxicology Screen*** Specimens for toxicology are collected as a routine part for every autopsy. When the toxicology screening results were positive, follow-up studies were done to confirm the presence and level of substances. Subsequently, in correlation with other autopsy findings, a determination is made by the medical examiner/coroner pathologist in collaboration with investigative findings as to whether substances caused, contributed or were not related to the death. CDR findings about the toxicology screens were obtained from the autopsy report. Figure 8 shows the child deaths between 2001 and 2006 that screened positive and negative for a toxicology screen for substance abuse.

**Figure 8. Toxicology Screen of Child Decedent in Hawaii, Comprehensively Reviewed, 2001-2006 (N=303)**




Of the 372 deaths comprehensively reviewed, the toxicology screen information was available for 81% (n=303). Of these 303 deaths, 78% (n=236) had a negative toxicology screen, while 22% (n=67) had a positive toxicology screen.

**Source:** State of Hawaii, National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. Number of deaths includes resident and non-resident deaths. For toxicology screen, 18 deaths were blank, 24 deaths were indicated as unknown, and 27 deaths had no toxicology screen reported. Summation of percentages may not total 100% due to rounding.

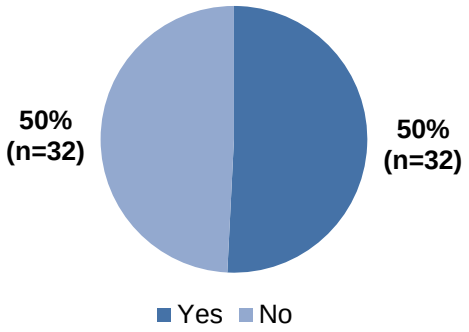
Of the 67 deaths with a positive toxicology screen, information on the type of substance was available for 83% (n=54); 2 deaths were blank and 11 deaths were indicated as unknown. More than one substance was identified in the toxicology screen for 18 children. Of 54 children with a positive toxicology screen with known substances reported:

- 44% (n=24) were positive for alcohol;
- 41% (n=22) were positive for marijuana;
- 11% (n=6) were positive for tobacco;
- 8% (n=5) were positive for methamphetamine.

***Problems in School*** During 2006, nearly 3.5 million high school students were school dropouts in the U.S. representing 9.3% of the population aged 16-24 years of age.[xx] The percentage of Hawaii teens 16-19 years of age not enrolled in school and did not complete high school rose from 5% in 2000 to 8% in 2008.[xxi] In 2008, Hawaii's rate of 8% is higher than the U.S. rate of 6%.

The occurrence of school problems may be a predictor or factor related to a child death. This information is difficult to gather by CDR due to Federal laws that restrict disclosure of school information without parental consent. Figure 9 shows child deaths between 2001 and 2006 according to problems in school.

**Figure 9. Child Deaths by Problems in School Among Children 5-17 Years of Age in Hawaii, Comprehensively Reviewed, 2001-2006 (N=64)**




Of the 149 deaths in children 5-17 years of age comprehensively reviewed, problems in school information was available for 43% (n=64). Of these 64 deaths, 50% (n=32) had problems in school reported and 50% (n=32) had no problems in school reported. **Note- missing information, interpret with caution.**

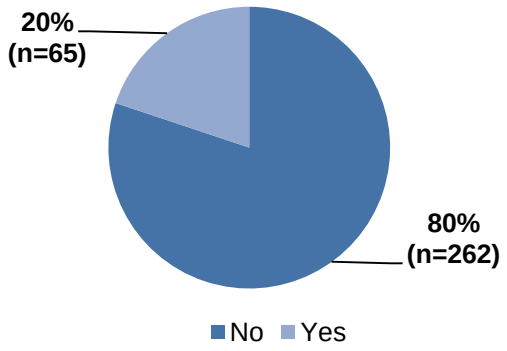
**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For school problems among children 5-17 years of age, 38 deaths were blank and 48 deaths were indicated as unknown. Summation of percentages may not total 100% due to rounding.

Of the 32 children with problems in school, information on the type of problem was available for all. More than one problem in school was reported for six children. Of the 32 children with problems in school reported:

- 53% (n=17) had truancy problems;
- 28% (n=9) had academic problems;
- 9% (n=3) had behavioral problems;
- 41% (n=13) had other school problems.

***History of Child Maltreatment*** The U.S. policy to prevent child maltreatment, The Child Abuse Prevention & Treatment Act (CAPTA) was enacted in 1974 (P.L. 93-247) and was amended and reauthorized by the Keeping Children and Families Safe Act of 2003. The Federal Government funds efforts to prevent child abuse through the Community-Based Child Abuse Prevention Grants (CBCAP). CDR is one source of information used to inform prevention efforts. In 2002, the public health consequences of child maltreatment and the role of public health in prevention and services were presented by the World Health Organization in the 1st World Report on Violence and Health.[xxii] A World Health Assembly resolution to implement the recommendations of this report followed in 2003. The CDR-CRS Dictionary includes referral or substantiation from Child Protective Services or documentation from the autopsy. Histories of child maltreatment as the victim as well as the perpetrator of the maltreatment, caregiver, and supervisor were included in the comprehensive review. These histories included physical, sexual, or emotional abuse, neglect, and unknown types of maltreatment of the victim. Figure 10 shows the child deaths between 2001 and 2006 according to maltreatment as a victim.

**Figure 10. Child Deaths by History of Child Maltreatment as a Victim in Hawaii, Comprehensively Reviewed, 2001-2006 (N=327)**




Of the 372 deaths comprehensively reviewed, history of child maltreatment as a victim information was available for 88% (n=327). Of these 327 deaths, 20% (n=65) had a history of child maltreatment as a victim and 80% (n=262) had no history of child maltreatment as a victim.

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For history of child maltreatment as a victim, 27 deaths were blank and 18 deaths were indicated as unknown. Summation of percentages may not total 100% due to rounding.

Of the 65 children with a history of child maltreatment as a victim, information on the form of maltreatment was available for 77% (n=50); 15 deaths were indicated as unknown. More than one form of maltreatment was reported for 16 children. Of 50 children who were reported as victims of child maltreatment:

- 70% (n=35) experienced neglect;
- 50% (n=25) experienced physical abuse;
- 8% (n=4) experienced emotional or psychological abuse;
- 6% (n=3) experienced sexual abuse.

***Placement Outside of the Home*** It is important to look at placement outside of the home for the child and sibling because it may provide information about child safety. The CDR-CRS Dictionary includes foster parent placement, whether through the death of the biological parents, through voluntary or forced adoption or through forced removal from a biological or adoptive home. Foster care includes licensed and relative or kinship homes. CDR reported child placement outside of the home as obtained from various agencies. Table 11 shows the child deaths between 2001 and 2006 for children who were placed outside the home or remained inside the home.

**Table 11. Child Deaths by Placement Outside the Home for Child (N=335) and Sibling (N=302) in Hawaii, Comprehensively Reviewed, 2001-2006**

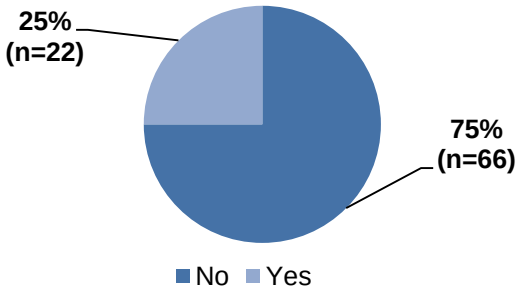
| Placement Outside the Home | Number of that had placement | Number that did not have placement | Percent of Deaths |
|---|---|---|---|
| Child | 21 | 314 | 6% |
| Sibling | 16 | 286 | 5% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For placement outside the home for child, 22 child deaths were blank and 15 were unknown. For placement outside the home for sibling, 32 deaths were blank and 38 deaths were indicated as unknown.

Of the 372 deaths comprehensively reviewed, placement outside of the home for the child information was available for 90% (n=335). Of these 335 deaths, placement outside of the home for the child occurred in only 6% of cases (n=21). Of the 372 deaths, placement outside of the home for the sibling was available for 81% (n=302). Of these 302 deaths, placement outside of the home for the sibling occurred in 5% (n=16).

***Delinquent or Criminal History*** It is important to look at delinquent or criminal history because children who engage in crime may take other risks. Juvenile crime reached its fifth consecutive record low in the U.S. during 2002 while Hawaii's overall crime index among all ages increased in 2002.[xxiii] The CDR-CRS Dictionary includes a documented history of delinquent or criminal behaviors or actions. CDR reported delinquent or criminal history by children 10-17 years old as obtained from various agencies. Figure 11 shows the child deaths between 2001 and 2006 for children who had a delinquent history and for those who did not.

**Figure 11. Child Deaths by Delinquent or Criminal History by Children 10-17 Years of Age in Hawaii, Comprehensively Reviewed, 2001-2006 (N=88)**




Of the 132 deaths to children 10-17 years of age comprehensively reviewed, delinquent or criminal history information was available for 67% (n=88). Of these 88 deaths, 25% (n=22) had a delinquent or criminal history while 75% (n=66) did not. **Note-missing information, interpret with caution.**

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For delinquent or criminal history by children 10-17 years of age, 26 deaths were blank 11 deaths were indicated as unknown and 7 deaths were listed as not applicable. Summation of percentages may not total 100% due to rounding.

Of the 22 children 10-17 years of age with a delinquent or criminal history identified, information on the type of delinquent or criminal history was available for 95% (n=21); 1 death was blank. More than one type of delinquent or criminal history was reported for five children. Of 21 children with delinquent or criminal history reported:

- 19% (n=4) committed robbery;
- 14% (n=3) had drug offenses;
- 10% (n=2) committed assault;
- 95% (n=20) committed other acts (truancy and theft were most common).

"Multidisciplinary child death reviews using standard protocols for investigation and reporting provide the best mechanisms for designing interventions for prevention of these tragic deaths from abuse, neglect, violence, foul play, and in sleeping environments and are therefore of paramount public health importance in our community."

William W. Goodhue, Jr., M.D., Honolulu Acting Chief Medical Examiner

# Place of Incident

It is important to look at the place of incidence where the fatal incidence occurred since it is beneficial for planning prevention programs. As early as 1948, the W.K. Kellogg Foundation identified a need for home accident prevention programs and funded the first home accident prevention demonstration grant in Kalamazoo, Michigan and later expanded programs to 9 states.[xxiv] CDR reports place of incident information as obtained from various agencies. Table 12 shows the child deaths between 2001 and 2006 according to the place of incident.

**Table 12. Child Deaths by Place of Incident in Hawaii, Comprehensively Reviewed, 2001-2006 (N=357)**

| Place of Incident | Number of Deaths | Percent of Deaths |
|---|---|---|
| Child's home | 194 | 54% |
| Roadway | 76 | 21% |
| Relative's home | 15 | 4% |
| Licensed or unlicensed foster care / group home / relative care / child care | 15 | 4% |
| Other recreation area | 14 | 4% |
| Hospital | 8 | 2% |
| Driveway / sidewalk / parking area | 9 | 3% |
| Friend's home | 6 | 2% |
| State park | 6 | 2% |
| School or work | 5 | 1% |
| Other place | 15 | 4% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Number of deaths includes resident and non-resident deaths. For place of incident, 12 deaths were blank and 3 deaths were indicated as unknown. More than one place of incident could be selected so the summation of the individual percents in the table will exceed 100%. Six deaths had more than one place of incident recorded.

Of 372 deaths comprehensively reviewed, information on the place of incidence was available for 96% (n=357). Among these 357 deaths, the place of incident reported:

- 54% (n=194) was at the child's home;
- 21% (n=76) was a roadway;
- 4% (n=15) was at a licensed or unlicensed foster care, group homes, relative care or childcare;
- 4% (n=15) was at another place.

Other place included hotels, shelter, an abandoned neighborhood house, shopping center, grocery store, car, rain catchment area, open area near a construction site, and medical facilities.

# Caregiver Information

A caregiver is a person in a permanent or temporary custodial role. In a custodial role, the person is responsible for the care, control and the overall health and welfare of the child. Parents are caregivers who may, or may not, be biologically related to a child. The CDR-CRS dictionary includes the primary caregiver(s) as a person or persons (up to two) who have responsibility for the care, custody, and control of the child a majority of the time. If there are two primary caregiver(s) for a child, the first is called the primary caregiver and the second is called the secondary caregiver for this report.

***Relationship to Child*** It is important to look at the relationship to the child for the caregiver because it provides a context for the child and may be a factor related to a child death. CDR reports relationship to the child information as obtained from various agencies. Table 13 shows the child deaths between 2001 and 2006 according to the relationship to the child.

**Table 13. Child Deaths by Relationship to Child for Primary (N=344) and Secondary Caregiver (N=237) in Hawaii, Comprehensively Reviewed, 2001-2006.**

| Relationship to Child for Caregiver | Number of Primary Caregiver | Percent of Primary Caregiver | Number of Secondary Caregiver | Percent of Secondary Caregiver |
|---|---|---|---|---|
| Biological parent | 315 | 92% | 200 | 84% |
| Foster parent | 8 | 2% | 6 | 3% |
| Other relative | 2 | 1% | 1 | <1% |
| Adoptive parent | 3 | 1% | 16 | 7% |
| Grandparent | 5 | 1% | 3 | 1% |
| Sibling | 0 | 0% | 3 | 1% |
| Self | 8 | 2% | 0 | 0% |
| Partner | 0 | 0% | 4 | 2% |
| Step parent | 0 | 0% | 4 | 2% |
| Other | 3 | 1% | 0 | 0% |
| Total | 344 | 100% | 237 | 100% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For type of primary caregiver, 18 deaths were blank and 10 deaths were indicated as unknown. For type of secondary caregiver, 128 deaths were blanks and 7 deaths were indicated as unknown. Summation of percentages may not total 100% due to rounding.

Of the 372 deaths comprehensively reviewed, the relationship to child for the caregiver information was available for 92% (n=344) of the primary caregivers and 64% (n=237) of the secondary caregivers.

Of these 344 primary caregivers:

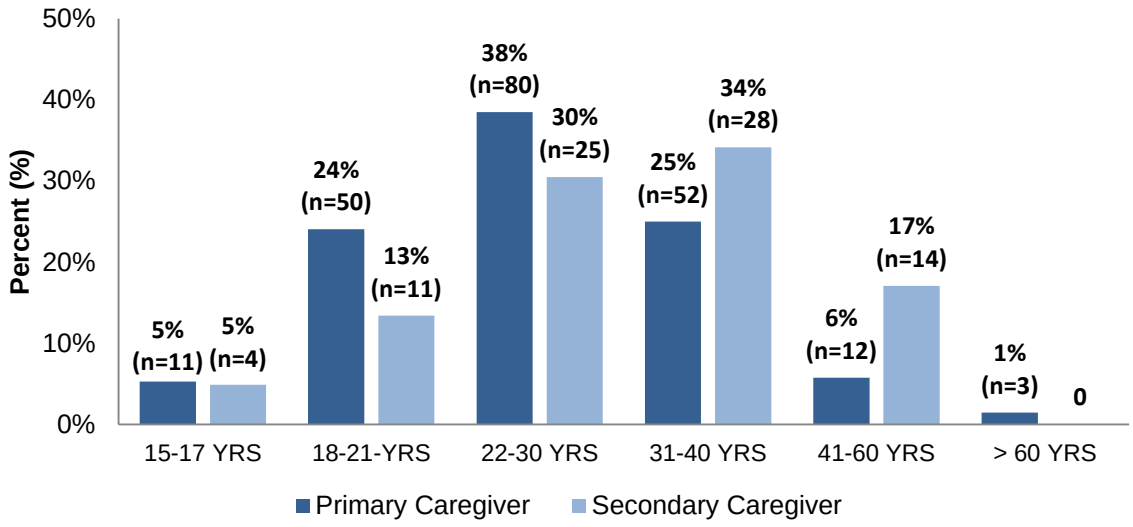
- 92% (n=315) were parents;
- 2% (n=8) were foster parents;
- 2% (n=8) were the child themselves;
- 1% (n=5) were grandparents.

Of these 237 secondary caregivers:

- 84% (n=200) were parents;
- 7% (n=16) were adoptive parents;
- 2% (n=4) were a partner;
- 2% (n=4) were a step parent.

***Age*** It is important to look at the caregiver age because different age groups have unique learning capabilities and values that affect their knowledge and judgment and may be a factor related to a child death. CDR reports age of caregiver information as obtained from various agencies. Efforts to improve collecting this information will allow conclusions that are more appropriate. Figure 12 shows child deaths between 2001 and 2006 for the ages of the primary and secondary caregivers.

**Figure 12. Child Deaths by Age of Primary (N=208) and Secondary Caregiver (N=82) in Hawaii, Comprehensively Reviewed, 2001-2006**




**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For age of primary caregiver, 28 deaths were blank, 118 deaths were indicated as unknown and 18 deaths were not available because no primary caregiver was identified. For age of secondary caregiver, 25 deaths were blank, 137 deaths were indicated as unknown and 128 deaths were not available because no secondary caregiver was identified. Summation of percentages may not total 100% due to rounding.

Of the 354 deaths with a primary caregiver identified comprehensively reviewed, information on age of the caregiver was available for 59% (n=208). Of these 208 primary caregivers:

- 5% (n=11) were younger than 17 years of age;
- 38% (n=80) were 22-30 years of age;
- 1% (n=3) were over 60 years of age.

Of the 244 deaths with a secondary caregiver identified comprehensively reviewed, information on age of the caregiver was available for 34% (n=82). Of these 82 secondary caregivers:

- 5% (n=4) were younger than 17 years of age;
- 34% (n=28) were 31-40 years of age.

***Employment Status*** It is important to look at employment status because caregiver employment can affect child health. These factors include family financial, emotional and psychological well being related to poverty and other socioeconomic disadvantages. In 2006, 71% of women with children under 18 years of age were in the labor force either employed or looking for work.[xxv] CDR reports employment status of the caregiver as obtained from various agencies. Table 14 shows the child deaths between 2001 and 2006 according to the employment status if the primary and secondary caregiver. "Stay at home" was used to describe a parent who was the main caregiver of the child and home. This term may be easily exchanged with unemployed, which is defined as a person who does not work at any time during the week.

**Table 14. Child Deaths by Employment Status of Primary (N=151) and Secondary Caregiver (N=107) in Hawaii, Comprehensively Reviewed, 2001-2006**

| Employment Status | Number of Primary Caregiver | Percent of Primary Caregiver | Number of Secondary Caregiver | Percent of Secondary Caregiver |
|---|---|---|---|---|
| Unemployed | 72 | 48% | 24 | 22% |
| Employed | 70 | 46% | 76 | 71% |
| Stay-at-home | 5 | 3% | 6 | 6% |
| On Disability | 3 | 2% | 1 | 1% |
| Retired | 1 | 1% | 0 | 0% |
| Total | 151 | 100% | 107 | 100% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. Percentage may not total 100% due to rounding. For employment status of the primary caregiver, 68 deaths were blank, 135 deaths were indicated as unknown, and 18 deaths were not available because primary supervisor identified was unknown or categorized as self. For employment of status of secondary caregiver, 39 deaths were blank, 98 deaths were indicated as unknown, and 128 deaths were not available because no secondary caregiver was identified. Summation of percentages may not total 100% due to rounding.

Of the 354 deaths with a primary caregiver identified, employment status information was available for 43% (n=151). **Note-missing information, interpret with caution.** Of the 151 primary caregivers, 48% (n=72) were unemployed and 46% (n=70) were employed.

Of the 244 deaths with a secondary caregiver identified, employment status information was available for 44% (n=107). **Note-missing information, interpret with caution.** Of the 107 secondary caregivers, 71% (n=76) were employed and 22% (n=24) were unemployed.

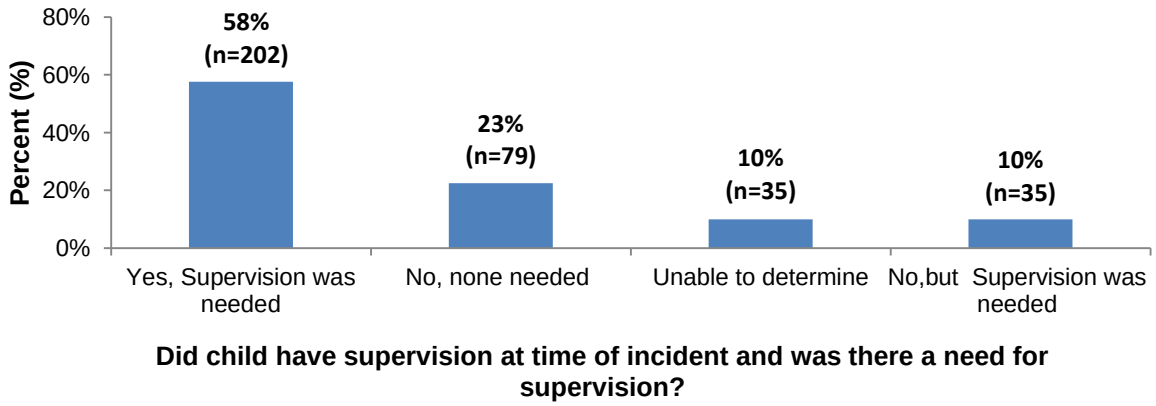
**Additional data is collected during comprehensive team reviews on the caregivers including their history of substance abuse, history of child maltreatment as a victim or perpetrator of the caregivers, history of intimate partner violence as a victim or perpetrator of the caregivers. Unfortunately, these important areas were omitted from this report because of the small sample size and a large proportion of missing information that they contained.**

# Supervisor Information

Supervision is a safety standard.[xxvi] In 2005, an estimated 60% of children less than 6 years of age required care from someone other than a parent at least once a week.[xxvii] Based on parents' reports, 21.9% of children in Hawaii 6-11 years of age were home alone at some point during a one-week period compared to 15.9% of the children in the U.S.[xxviii] Poor family supervision has been cited as a risk factor in Hawaii.[xxix] Inadequately supervised children are more likely to have drug or alcohol problems, mental health problems, developmental disabilities, problems with the law, school or other problems. In addition, when supervision was inadequate, their mothers were less likely to have acceptance of and or affection for their children, expectations of their children, teach or stimulate their children and provide mental health care.[xxx] The CDR-CRS Dictionary defines supervisor as the person(s) who had responsibility for the care and control of child at time of incident. If supervision was divided between two people, the person in closest proximity to the child prior to the incident was listed as the supervisor.

***Need for Supervision*** It is important to look at the need for supervision because a lack of clear expectations and a failure to monitor children's behaviors affects child safety and may contribute to death. Examples of laws and policies for supervision in the State of Hawaii are child abuse and neglectlaws which include chronic and persistent truancy, running away, violating curfew laws, being ungovernable or incorrigible, and possessing alcohol or tobacco. Figure 13 shows child deaths between 2001 and 2006 according the need for supervision.

**Figure 13. Child Deaths by Need for Supervision in Hawaii, Comprehensively Reviewed, 2001-2006 (N=351)**




**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For need for supervision, 21 deaths were blank. Summation of percentages may not total 100% due to rounding.

Of the 372 deaths comprehensively reviewed, information on the need for supervision was available for 94% (n=351). Of these 351 deaths:

- 58% (n=202) had supervision that was needed at the time of the incident;
- 23% (n=79) did not have supervision and none was needed;
- 10% (n=35) the team was unable to determine if supervision was needed;
- 10% (n=35) did not have supervision that was needed.

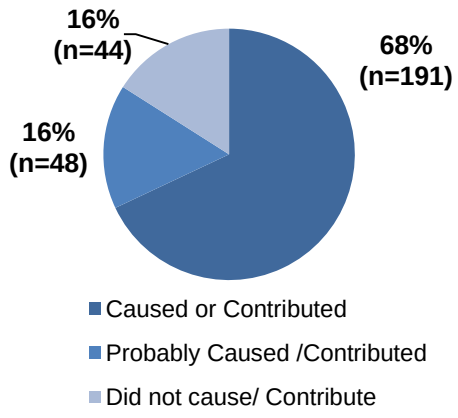
**Additional data is collected during comprehensive team reviews on the supervisor including their relationship to the child, any disability or chronic illness, history of substance abuse, history of child maltreatment as a victim or perpetrator or criminal history of the supervisors. Unfortunately, these important areas were omitted from this report because of the small sample size and a large proportion of missing information that they contained.**

# Omission (neglect) and Commission (abuse) Factors

The Centers for Disease Control & Prevention (CDC) defines child maltreatment as any act or series of acts of omission (neglect) or commission (abuse) by a parent or other caregiver that results in harm, potential for harm, or threat of harm to a child.[xxxi] A National Academy of Science report on child maltreatment concluded that child maltreatment definitions vary and the paucity of measures is a handicap in understanding of the causes and effects of maltreatment.[xxxii] The CDC recommends that all types of child maltreatment be included in data collection. More than one form of maltreatment can coexist. The CDR-CRS Dictionary defines acts of omission (neglect) or commission (abuse) as any act(s) or failure to act which causes (i.e., directly) and or substantially contributes to (i.e., indirectly) a child's death.

***Direct or Contributing Cause of Death*** CDR teams consider acts of commission (abuse) or omission (neglect). These are human acts that may have been the cause (directly) and/or substantially contributed to (indirectly) or both that led to the physiological processes precipitating the child's death. The contributing cause of death refers to an indirect act that played a role, but was not the primary role or a direct cause of the physiological processes precipitating the child's death. CDR reports omission (neglect) or commission (abuse), based on evidence and professional judgment**.** Figure 14 shows child deaths between 2001 and 2006 according to acts of omission (neglect) or commission (abuse).

**Figure 14. Child Deaths by Contribution of Act(s) of Omission (neglect) or Commission (abuse) to Child Deaths in Hawaii, Comprehensively Reviewed, 2001-2006 (N=283)**



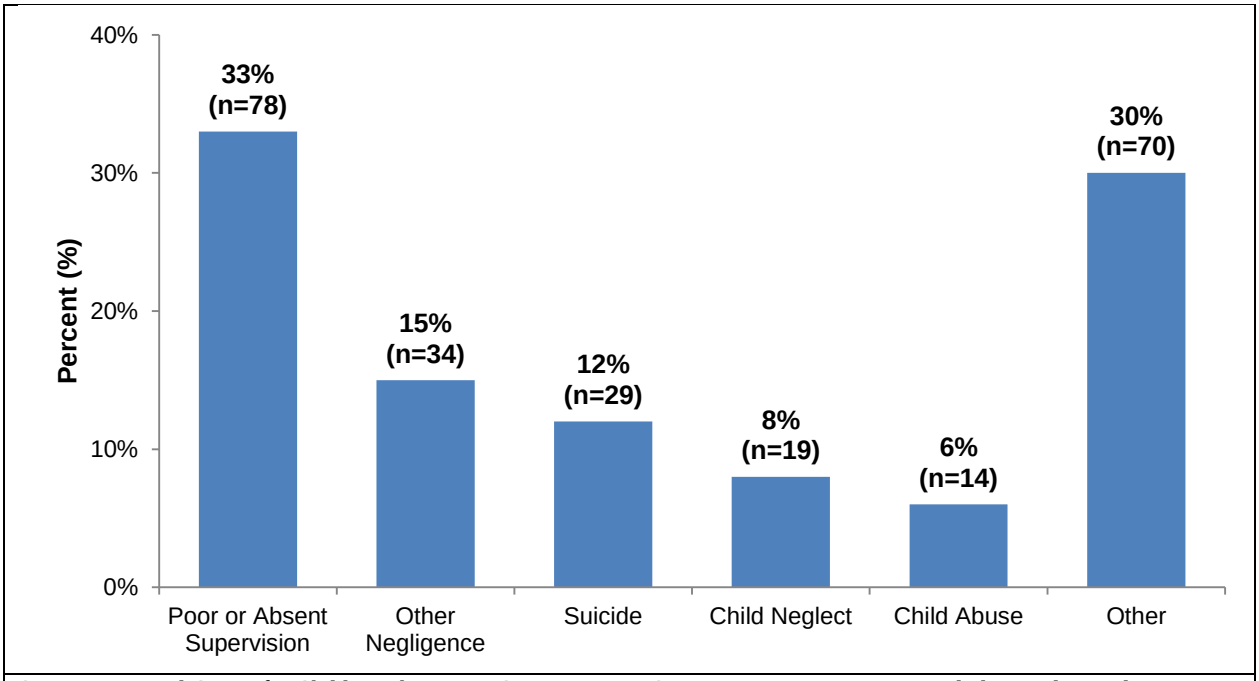

Of the 372 deaths comprehensively reviewed, contribution of act(s) of omission (neglect) orcommission (abuse) information was available for 76% (n=283). Of these 283 deaths, 68% (n=191) involved an act(s) that caused or contributed to the deaths, 16% (n=48) which probably involved an act(s), and 16% (n=44) where no act caused or contributed to the death.

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For contribution of act(s) of omission (neglect) or commission (abuse) to child deaths, 37 deaths were blank and 52 deaths were indicated as unknown. Summation of percentages may not total 100% due to rounding.

***Types of Acts that Caused or Contributed to Child Deaths*** Acts that cause or contribute to an event may be active or passive. In reviewing the type of acts that may have caused or contributed to a child's death, Child Death Review reported poor or absent supervision, negligence, suicide, child neglect, child abuse or other acts to track data for the prevention of intentional and unintentional child deaths. Each type of act is discussed in detail later in this

section. Figure 15 shows the types of acts that caused or contributed to child deaths between 2001 and 2006 that were comprehensively reviewed

**Figure 15. Child Deaths by Types of Act(s) that Caused or Contributed to Child Deaths in Hawaii, Comprehensively Reviewed, 2001-2006 (N=235)**




**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For types of act(s) that caused or contributed to child deaths, 3 deaths were blank and 1 death was indicated as unknown. Both an act that caused and/or contributed could be selected so the summation of percentages will exceed 100%. In 9 deaths, both a cause and contributing act were identified.

Of the 239 deaths with a determination of omission (neglect) or commission (abuse), the type of omission (neglect) or commission (abuse) act(s) that caused or contributed to deaths information was available for 98% (n=235). Among these 235 deaths, the type of act(s) that caused or contributed to deaths reported:

- 33% (n=78) were poor or absent supervision;
- 15% (n=34) were other negligence;
- 12% (n=29) were suicide;
- 8% (n=19) were child neglect;
- 6% (n=14) were child abuse;
- 30% (n=70) were other acts.

***Type of Acts by Age*** It is important to look at the contribution of act(s) of omission (neglect) or commission (abuse) by age group because child maltreatment occurs across all ages. The act(s) that caused and or contributed to child deaths during 2001-2006 are described by distribution among five age groups. Table 15 shows child deaths between 2001 and 2006 according to age and types of acts that caused or contributed to the death.

**Table 15. Child Deaths by Types of Act(s) that Caused or Contributed to Child Deaths by Age in Hawaii, Comprehensively Reviewed, 2001-2006 (N=235)**

| | Poor or Absent Supervision | | Other Negligence | | Suicide | | Child Neglect | | Child Abuse | | Other | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age (Years) | n | % | n | % | n | % | n | % | n | % | n | % |
| Infant | 32 | 41% | 2 | 6% | 0 | 0% | 8 | 42% | 8 | 57% | 47 | 67% |
| 1-4 | 26 | 33% | 6 | 18% | 0 | 0% | 8 | 42% | 5 | 36% | 3 | 4% |
| 5-9 | 4 | 5% | 1 | 3% | 0 | 0% | 0 | 0% | 1 | 7% | 3 | 4% |
| 10-14 | 3 | 4% | 6 | 18% | 10 | 34% | 3 | 16% | 0 | 0% | 8 | 11% |
| 15-17 | 13 | 17% | 19 | 56% | 19 | 66% | 0 | 0% | 0 | 0% | 9 | 13% |
| Total | 78 | 100% | 34 | 100% | 29 | 100% | 19 | 100% | 14 | 100% | 70 | 100% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Table includes resident and non-resident deaths. For types of act(s) that caused or contributed to child deaths,3 deaths were blank and 1 death was indicated as unknown. Summation of percentages may not total 100% due to rounding.

***Poor or Absent Supervision*** Poor or absent supervision may be used to describe a caregiver behavior that did not reach the level of maltreatment. This can include exposure to violent environments as well as failure by the caregiver to support the child in safe activities and use of appropriate safety devices. "Supervisional neglect" refers to an act of a caregiver knowingly failing to protect a child from maltreatment caused by a substitute caregiver and the maltreatment is recognized and allowed to occur.[xxxiii]

Of the 235 deaths for which the type of omission (neglect) or commission (abuse) act(s) that caused or contributed were made, 33% (n=78) had acts of poor or absent supervision identified. Of these 78 deaths:

- 41% (n=32) were infants;
- 33% (n=26) were children 1-4 years of age;
- 17% (n=13) were children 15-17 years of age.

***Other Negligence*** Other negligence refers to acts or failures to act that are neglectful including criminal negligence, vehicular manslaughter, voluntary intoxication, but not restricted to the level of criminal culpability and may be a marker of risk taking behavior for older children.

Of the 235 deaths for which the type of omission (neglect) or commission (abuse) act(s) that caused or contributed were made, 15% (n=34) had acts of negligence identified. Of these 34 deaths:

- 56% (n=19) were children 15-17 years of age;
- 18% (n=6) were children 10-14 years of age;
- 18% (n=6) were children 1-4 years of age.

***Suicide*** Suicide is the act of deliberately ending one's own life. Suicidal behavior is any deliberate action with potentially life threatening consequences such as deliberately crashing a car or taking a drug overdose.

Of the 235 deaths for which the type of omission (neglect) or commission (abuse) act(s) that caused or contributed were made, 12% (n=29) had acts of suicide identified. Of these 29 deaths:

- 66% (n=19) were children 15-17 years of age;
- 34% (n=10) were children 10-14 years of age.

***Child Neglect*** Neglectful behavior is behavior by a caregiver that constitutes a failure to act in ways presumed by a culture or a society to be necessary to meet a child's basic physical, emotional, or educational needs or to protect a child from harm or potential harm. Harm to a child may or may not be the intended consequence. Types of child maltreatment can include physical neglect, emotional neglect, medical/dental neglect, educational neglect, failure to supervise, and exposure to violent environments.

Of the 235 deaths for which the type of omission (neglect) or commission (abuse) act(s) that caused or contributed were made, 8% (n=19) had acts of neglect identified. Of these 19 deaths:

- 42% (n=8) were infants;
- 42% (n=8) were children 1-4 years of age;
- 16% (n=3) were children 10-14 years of age.

***Child Abuse*** Child Abuse includes words or overt actions that cause harm, potential harm, or threat of harm to a child. Acts are deliberate and intentional; however, harm to a child may or may not be the intended consequence. Intentionality only applies to the caregivers' acts-not the consequences of those acts. For example, a caregiver may intend to hit a child as punishment (i.e., hitting the child is not accidental or unintentional) but not intend to cause the child to have a concussion. Physical abuse, sexual abuse, and emotional abuse involve acts of commission (abuse). Of 235 deaths for which the type of omission (neglect) or commission (abuse) act(s) that caused or contributed were made, 6% (n=14) had acts of child abuse identified. Of these 14 deaths:

- 57% (n=8) were infants;
- 36% (n=5) were children 1-4 years of age;
- 7% (n=1) were children 5-9 years of age.

***Other*** The category other act(s) was used by CDR teams to identify failure to obtain recommended medical care for the mother and infant, family arguments, social norms regarding underage drinking, unlicensed youth using mopeds, issues related to age of consent and lack of fencing around dangerous areas. The other category used most frequently by CDR teams was to describe unsafe sleep environments for infants.

Of 235 deaths for which the type of omission (neglect) or commission (abuse) act(s) that caused or contributed were made, 30% (n=70) had other acts identified. Of these 70 deaths:

- 48% (n=47) were infants;
- 29% (n=8) were children 10-14 years of age;
- 16% (n=9) were children 15-17 years of age.

Table 16 shows the child deaths between 2001 and 2006 by the type of neglect.

**Table 16. Child Deaths by Type of Neglect that Caused or Contributed to Child Deaths in Hawaii, Comprehensively Reviewed, 2001-2006 (N=19)**

| Type of Neglect | Number of Deaths | Percent of Deaths where neglect determined |
|---|---|---|
| Failure to seek/follow treatment | 11 | 58% |
| Failure to protect from hazards | 7 | 37% |
| Failure to provide necessities | 2 | 11% |
| **Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Number of deaths includes resident and non-resident deaths. More than one type of neglect that caused or contributed to child death could be selected so the summation of individuals' percents in the table will exceed 100%. One death had 2 types of neglect selected. | | |

Of these 19 child neglect deaths for which information on type of neglect were reported, in the death of one death, two types of neglect were selected. The type of neglect attributed for:

- 58% (n=11) was a failure to seek or follow treatment;
- 37% (n=7) was a failure to protect from hazards;
- 11% (n=2) was a failure to provide necessities.

Table 17 shows child deaths between 2001 and 2006 according to the type of abuse that caused or contributed to the death.

**Table 17. Child Deaths by Type of Child Abuse that Caused or Contributed to Child Deaths in Hawaii, Comprehensively Reviewed, 2001-2006 (N=14)**

| Type of Abuse | Number of Deaths | Percent of Deaths where abuse was determined |
|---|---|---|
| Physical | 14 | 100% |
| Emotional | 0 | 0% |
| Sexual | 0 | 0% |
| **Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Number of deaths includes resident and non-resident deaths. More than one type of abuse that caused or contributed to child death could be selected so the summation of individuals' percents in the table could exceed 100%. No deaths had more than 1 type of abuse selected. | | |

Of 14 child abuse deaths, information on the type of abuse was available for all. Of these, 100% (n=14) had physical abuse identified. None had emotional or sexual abuse identified. Although emotional and sexual abuses are common forms of child abuse, the CDR process did not identify any occurrences. These forms of child abuse are frequently under-reported. This under-reporting may explain why emotional and sexual abuses were not identified in the CDR data.

Of the 14 child abuse deaths with physical abuse identified, information on the type of physical abuse was available for all. More than one type of physical abuse was reported for one child. Of these, the types of physical abuse included:

- 57% (n=8) which involved abusive head trauma;
- 14% (n=2) which involved chronic battered child syndrome;
- 36% (n=5) which involved other types of physical abuse.

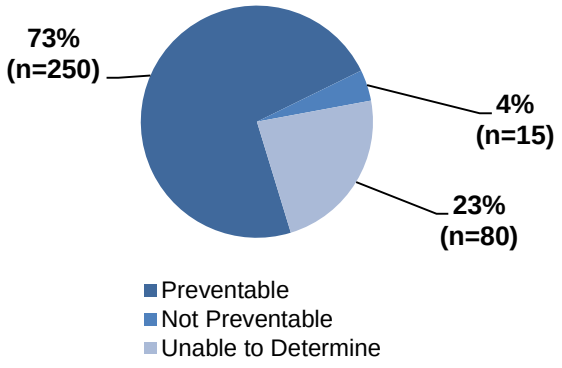
## Preventability

There is no common national standard to define the preventability of child deaths; however, many CDR programs adopt the NCCDR-CRS data dictionary definition—a child's death is considered preventable if the community (education, legislation, etc.) or an individual (reasonable precaution, supervision or action) could reasonably have done something that would have changed the circumstances that led to the child's death.[xxxiv]

Local teams selected one of three determinations to describe preventability:

1. No, the death was probably not preventable
2. Yes, the death was probably preventable
3. The local team could not determine if the death was preventable

**Figure 16. The Preventability Determination of Child Deaths in Hawaii, Comprehensively Reviewed, 2001-2006 (N=345)**




Of the 372 deaths comprehensively reviewed, a preventability determination was available for 93% (n=345). Of these 345 deaths, 73% (n=250) were reported as yes the death was probably preventable, 23% (n=80) were reported as unable to determine, and in only 4% (n=15) of the deaths were reported as probably not preventable.

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Number of deaths includes resident and non-resident deaths. For determination of preventability, 27 deaths were blank. Summation of percentages may not total 100% due to rounding.

# CHAPTER 5-SELECTED TOPICS

The following section highlights data on special topics of relevance due to the high incidence of these cases among comprehensively reviewed child deaths: infant sleep related deaths, motor vehicle and other transport deaths and asphyxia deaths. Data was collected on other topics including homicide, weapons, and fall or crush deaths; the data are not reported here due to the small number of cases involved (less than 25 cases for each topic).

## Infant Sleep Related Deaths

This section describes a group of deaths that occurred suddenly in a sleep related circumstance among infants from birth to under one year old. There has been a shift in diagnosis of infant deaths away from Sudden Infant Death Syndrome (SIDS) to accidental suffocation and strangulation in bed (ASSB) and undetermined causes.

The "Triple Risk Model" theorizes that the cause of sudden infant death is multifactorial or due to the number of intersecting risk factors. The three factors are: (1) the vulnerable infant; (2) the vulnerable time of development; and (3) external stressors. A sudden death may occur at a time when the infant's defense mechanisms are diminished. [xxxv]

The U.S. Centers for Disease Control and Prevention (CDC) recognized this trend. In an attempt to ensure validity and consistency in infant mortality rates, the CDC initiated two strategies to improve investigations and the coding of infant deaths. The CDC's Sudden Unexplained Infant Death (SUID) Initiative calls for a standard for uniform and consistent collecting and reporting of data regarding the risk and coding of infant deaths. Sudden Unexpected Infant Death (SUID) in the sleep environment is a group of infant deaths. SUID may be due to natural or unnatural causes and includes Sudden Infant Death Syndrome (SIDS), asphyxia, strangulation, suffocation, medical conditions like metabolic error, injury or trauma, homicide, undetermined and 'other causes'.

"At first, we were told that my granddaughter died of SIDS, but after we learned that she suffocated. I am now involved in Safe Sleep Hawaii and support the mission of increasing awareness of safe sleep practices to eliminate unexpected infant deaths due to unsafe sleep environment. This information will prevent any family from experiencing the pain we suffered and still do"

Dana Fong, Grandparent

# *Demographics*

***County*** Table 18 shows the infant sleep related deaths between 2001 and 2006 by each county.

**Table 18. Infant Sleep Related Deaths by County of Incident in Hawaii, Comprehensively Reviewed, 2001-2006 (N=118)**

| County | Number of Deaths | Percent of Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|
| Honolulu | 85 | 72% | 85 | 72% | 71% |
| Neighbor Island Counties | 33 | 28% | 33 | 28% | 29% |
| Total | 118 | 100% | 118 | 100% | 100% |

**Source:** National Center for Child Death Review Case Reporting System, Resident population estimates were from the 2000 Census for the State of Hawaii, children under 18 years of age. **Data Note:** Summation of percentages may not total 100% due to rounding.

Of the 118 infant sleep related deaths, the county of incident information was available for all. Of these, all were residents. Of 118 resident deaths, the county of incident for72% (n=85) was Honolulu County, and 28% (n=33) for the Neighbor Island counties combined.

The proportion of infant sleep related deaths that occurred in Honolulu (72%), or the Neighbor Island counties combined was about the same as the respective percent of resident populations (Honolulu = 71%, Neighbor Island counties combined = 29%).

***Race*** Table 19 shows the infant sleep related deaths between 2001 and 2006 by race.

**Table 19. Infant Sleep Related Deaths by Race in Hawaii, Comprehensively Reviewed, 2001-2006 (N=118)**

| Race | Number of Deaths | Percent of Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|
| Native Hawaiian | 63 | 53% | 63 | 53% | 32% |
| Asian | 26 | 22% | 26 | 22% | 39% |
| Other ethnic groups | 29 | 24% | 29 | 24% | 29% |
| Total | 118 | 100% | 118 | 100% | 100% |

**Source:** National Center for Child Death Review Case Reporting System. Resident population estimates were from OHSM 2003-2004 Hawaii Household Survey, children under 18 years of age. **Data Note:** Summation of percentages may not total 100% due to rounding.

Of the 118 infant sleep related deaths, race information was available for all. Of these, all were residents. Of the 118 resident deaths, the race for:

- 53% (n=63) were Native Hawaiian;
- 22% (n=26) were Asian;
- 24% (n=29) were all other ethnic groups combined.

The proportion of Native Hawaiian deaths was more than 1.5 times greater than the respective percent of the resident population (32%), while the proportion of Asian deaths was lower than the respective resident child populations (Asian=39%).

***Age*** Table 20 shows the infant sleep related deaths between 2001 and 2006 by age.

**Table 20. Infant Sleep Related Deaths by Age in Hawaii, Comprehensively Reviewed, 2001-2006 (N=118)**

| Age(Months) | Number of Deaths | Percent of Deaths | Number of Resident Deaths | Percent of Resident Deaths |
|---|---|---|---|---|
| < 2 | 40 | 34% | 40 | 34% |
| 2-3 | 33 | 28% | 33 | 28% |
| 4-5 | 25 | 21% | 25 | 21% |
| 6+ months | 20 | 18% | 20 | 18% |
| Total | 118 | 100% | 118 | 100% |

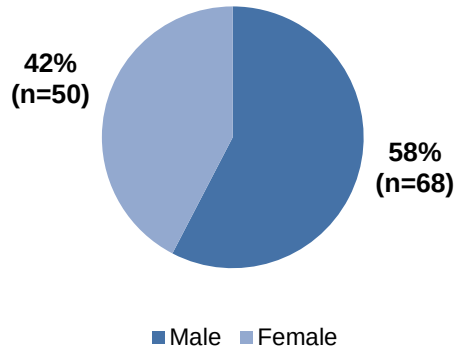
**Source:** National Center for Child Death Review Case Reporting System. Resident population estimates were from the 2000 Census for the State of Hawaii, children under 18 years of age. **Data Note:** Summation of percentages may not total 100% due to rounding.

Of the 118 Infant sleep related deaths, age information was available for all. Of these, all were residents. Of 118 resident deaths:

- 34% (n=40) were < 2 months of age;
- 28% (n=33) were 2 -3 months of age;
- 21% (n=25) were 4-5 months of age;
- 18% (n=20) were more than 6 months of age.

***Gender*** Figure 17 shows the infant sleep related deaths between 2001 and 2006 by gender.

**Figure 17. Infant Sleep Related Deaths by Gender in Hawaii, Comprehensively Reviewed, 2001-2006 (N=118)**




Of the 118 infant sleep related deaths comprehensively reviewed, gender information was available for all. Of these 118 deaths, 58% (n=68) were male and 42% (n=50) were female.

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Summation of percentages may not total 100% due to rounding.

# *Primary Cause of Death*

In Hawaii, there were 118 infant sleep related deaths identified from 2001-2006 and all were comprehensively reviewed. Infant sleep related deaths occurred in 76% (n=118) of the 156 reviewed infant deaths. Table 21 shows the infant sleep related deaths between 2001 and 2006 by the primary cause of death as injury or medical cause.

**Table 21. Infant Sleep Related Deaths by Primary Cause of Death in Hawaii, Comprehensively Reviewed, 2001-2006 (N=114)**

| Primary Cause of Infant Death | | Number of Infant Sleep Related Deaths | Percent of Infant Sleep Related Deaths |
|---|---|---|---|
| **Injury (external)** | Injury (external) | **69** | **61%** |
| | Undetermined | 48 | 42% |
| | Asphyxia | 21 | 18% |
| | Other | 1 | 1% |
| **Medical** | Medical | **30** | **26%** |
| | SIDS | 11 | 10% |
| | Other | 19 | 17% |
| | Undetermined | 2 | 2% |
| **Undetermined if injury (external) or medical** | | **12** | **13%** |
| **Total** | | 114 | 100% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** For infant sleep related deaths by primary cause, of injury (external cause) 1 death was indicated as unknown. For infant sleep related deaths of medical cause, 1 death was blank and 2 deaths were indicated as unknown. Summation of percentages may not total 100% due to rounding.

Of the 118 infant sleep related deaths, primary cause of death information was available for nearly all (n=114). Of these 114 deaths the primary cause of death for:

- 61% (n=70) were injury (external);
- 26% (n=30) were medical;
- 13% (n=15) were undetermined if injury or medical or other.

Of 114 infant deaths, 70 injury (external) primary cause of death included:

- 42% (n=48) were undetermined;
- 18% (n=23) were asphyxia.

Of 114 infant deaths, 32 medical primary cause of death included:

- 17% (n=19) were other;
- 10% (n=11) were SIDS.

Finally, undetermined injury or medical cause was 13% (n=15), used for deaths in which it could not be determined if the primary cause was injury or medical or other.

# *Other Factors*

***External Stressors and the Incident Place of Sleep*** It is important to look at sleep environment to reduce vulnerability for infant sleep. The sleep environment includes the place where the infant was put to sleep and other factors such as; overheating, loose bedding, sleeping with other persons and soft toys, swaddling, exposure to tobacco, not sleeping on the back, and maternal drug use. Crib bumpers and any equipment made with soft foam and devices designed to keep infants on their backs may increase the risk for suffocation. The American Academy of Pediatrics (AAP) guidelines for safe infant sleep advises parents to use a safety-approved crib and place infants to sleep on their backs on a firm mattress in smoke free setting. A safe infant sleep environment is also free of pillows, toys or loose bedding. Table 22 shows the infant sleep related deaths between 2001 and 2006 by the place of incidence.

**Table 22. Infant Sleep Related Deaths by Incident Sleep Place in Hawaii, Comprehensively Reviewed, 2001-2006 (N=118)**

| Incident Sleep Place | Number of Deaths | Percent of Deaths |
|---|---|---|
| Adult bed | 59 | 50% |
| Crib or bassinette | 28 | 24% |
| Other | 31 | 26% |
| Total | 118 | 100% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Summation of percentages may not total 100% due to rounding.

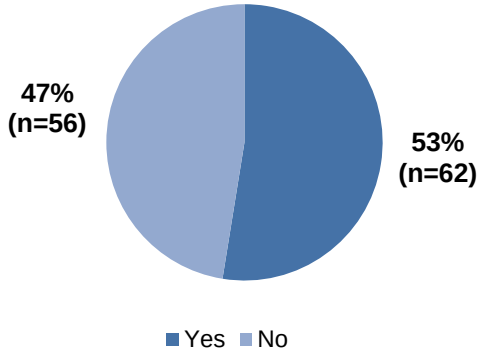
Of the 118 infant sleep related deaths, incident sleep place was available for all. Of these 118 deaths:

- 50% (n=59) were in an adult bed;
- 24% (n=28) were in a crib or bassinette;
- 31% (n=31) were on the floor, playpen or other in other places.

Other places included playpens, couches, floor, cushions , futons pillows, parent lap, infant carrier, car seat, mattress in a van or other place.

***Health and Risk Factors During Pregnancy*** It is important to look at prenatal care and conditions of the mother because these are predictors for birth outcomes. The mothers' health during pregnancy including maternal conditions, may be related to risk of infant death and was reported using information from linked birth-death certificates. Figure 18 shows the infant sleep related deaths between 2001 and 2006 by medical complications or infections, which occurred in the mother during pregnancy.

**Figure 18. Infant Sleep Related Deaths by Medical Complications or Infections during Pregnancy of Mother in Hawaii, Comprehensively Reviewed, 2001-2006 (N=118)**




Among 118 infant sleep related deaths, information on medical complication or infections during pregnancy of mother was available for all. Of these 118 deaths, 53% (n=62) had a medical complication or infection during pregnancy.

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Summation of percentages may not total 100% due to rounding.

Of the 62 infant sleep related deaths with information on medical complications or infections of the mother during pregnancy, more than one condition was reported for 41 mothers. The five top conditions during pregnancy were:

- 24% (n=15) other infectious disease;
- 21% (n=13) acute or chronic lung disease;
- 16% (n=10) pregnancy related hypertension;
- 15% (n=9) diabetes;
- 48% (n=30) other conditions during pregnancy.

Table 23 shows the infant sleep related deaths between 2001 and 2006 by the mother's other activities such as drug use, smoking, intimate partner violence, heavy alcohol use, prescription drug misuse or the infant born with fetal alcohol syndrome.

**Table 23. Infant Sleep Related Deaths by Other Information for Mother during Pregnancy in Hawaii, Comprehensively Reviewed, 2001-2006 (N=118)**

| During Pregnancy Mother | Number of Deaths | Percent of Deaths |
|---|---|---|
| Smoked | 45 | 38% |
| Used illicit drugs | 12 | 10% |
| Infant was born drug exposed | 8 | 7% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Percent of deaths are calculated among all infant sleep related deaths. More than one factor could be selected so summation of individual percents may not total 100%. 15 deaths had more than one factor selected.

Of the 118 infant sleep related deaths, other information for the mother during pregnancy was available for all. Of these 118 deaths, the mother for:

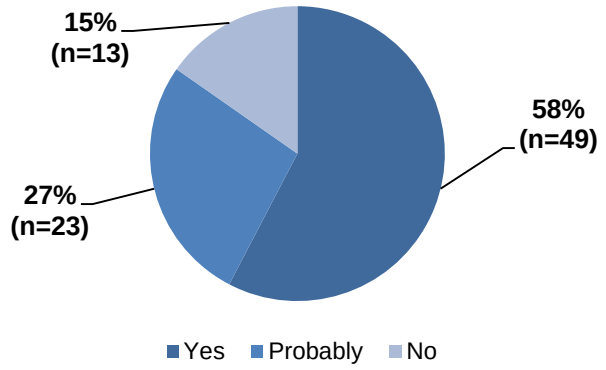
- 38% (n=45) smoked during pregnancy;
- 10% (n=12) used illicit drugs during pregnancy;
- 7% (n=8) gave birth to a drug exposed infant.

There were no reports of the mothers' misuse of over the counter or prescription drugs or giving birth to infants with fetal alcohol effects or syndrome. These risks, as well as exposure to tobacco may be under-reported due to limited access during 2001 to 2006 to the mother's history or protocols in Hawaii to evaluate pregnant women for misuse of over the counter or prescription drugs and infants born with fetal alcohol effect or syndrome. In summary, one third of infant sleep related deaths had prenatal tobacco exposure.

## *Omission (neglect) and Commission (abuse) Factors*

Figure 19 shows the infant sleep related deaths between 2001 and 2006 as a result of acts of omission (neglect) or commission (abuse).

**Figure 19. Infant Sleep Related Deaths by Contribution of Act(s) of Omission (neglect) or Commission (abuse) to Child Deaths in Hawaii, Comprehensively Reviewed, 2001-2006, (N=85)**




Of the 118 infant sleep related deaths, the contribution of act(s) of omission (neglect) or commission (abuse) that caused or contributed to the death was available for 72% (n=85). Of these 85 deaths, in 58% (n=49) there was an act(s) that caused or contributed to the deaths, 27% (n=23) which probably involved an act(s), and 15% (n=13) where no act caused or contributed to the death.

**Source:** National Center for Child Death Review Reporting System. **Data Note:** For contribution of acts of omission (neglect) or commission (abuse) to sleep related infant deaths, 12 deaths were blank and 21 deaths were indicated as unknown. Summation of percentages may not total 100% due to rounding.

Of 85 infant sleep related deaths with information related to omission (neglect) or commission (abuse), 98% (n=83) had information related to the type of act that caused or contributed to the death; two deaths were blank. Two deaths had both a cause and contributing act identified. The types of acts identified that caused or contributed to these 83 infant sleep related deaths were:

- 33% (n=27) poor or absent supervision;
- 2% (n=2) child abuse;
- 7% (n=6) child neglect;
- 45% (n=37) other (lack of a safe sleep environment most common).

# *Recommendations from Local Team Reviews*

## ***Improvements in System Responses***

- Provide training for coroners, medical examiners, investigators on best practices for infant autopsy and investigations (Center for Disease Control and Prevention) as well as first responders, medical providers and child welfare services.
- Continue data collection on sudden unexplained infant death scene investigation and autopsy through the Child Death Review Case Reporting System.

## ***Prevention Strategies to Avert Future Child Deaths***

- Endorse American Academy of Pediatrics Safe Sleep Best Practice for Infant sleep positioning and safe sleep practices.

## ***Policy Recommendations for Agencies Working on Behalf of Children***

- Childcare providers to obtain training and information to reduce the risk of SIDS through the American Academy of Pediatrics Healthy Child Care free module http://www.healthychildcare.org/pdf/SIDSmoduleflyerINSTRUCTIONS.pdf.
- Integrate in the community outreach information about safe sleep environments for infants, including the risks of bed sharing, exposure to tobacco and excess bedding.
- Annual updates for existing Hawaii hospital policies on safe sleep for infants.
- Expand safe sleep policies among shelters and other services to assist families in securing a crib.
- Contractors for prenatal care to integrate infant safe sleeping education, tobacco cessation and the prevention of unwanted pregnancy in contract requirements.

# Motor Vehicle and Other Transport Deaths

Motor vehicle crashes are the leading cause of death for children 3-6 and 8-14 years of age in the U.S. The U.S. motor vehicle traffic death rate for children 0-14 years of age decreased from 3.54 per 100,000 in 2002 to 3.01 per 100,000 in 2006. In 2006, Hawaii was among 25 states with a death rate below this national rate.[xxxvi] Motor vehicle and other transport deaths reported in this section involve cars, trucks, airplanes, helicopters, boats, motorcycles, mopeds, skateboards, bicycles, off-road vehicles such as all-terrain vehicles (ATVs) and motor bikes. Pedestrian activity was also reported and includes walking and skateboarding deaths. The laws in Hawaii to prevent motor vehicle and other transport deaths include issuing traffic violations, instituting a bicycle helmet law for children under 16 years of age, enforcing a pedestrian crossing law, instituting graduated driver licensing, enforcing booster and car seat laws, seatbelt laws, curfew laws, underage drinking, motor cycle and moped laws.

In Hawaii, there were 91 motor vehicle and other transport child deaths identified from 2001-2006 and all were comprehensively reviewed. Of the 372 reviewed deaths, 24% (n=91) were injury (external) causes related to motor vehicle and other transport events.

## *Demographics*

***County*** Table 24 shows the child deaths between 2001 and 2006 by motor vehicle or other transport by county.

**Table 24. Motor Vehicle and Other Transport Child Deaths by County of Incident in Hawaii, Comprehensively Reviewed, 2001-2006 (N=91)**

| County | Number of Deaths | Number of Non-Resident Deaths | Percent of Non-Resident Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|---|
| Honolulu | 45 | 3 | 43% | 42 | 50% | 71% |
| Neighbor Island Counties | 46 | 4 | 57% | 42 | 50% | 29% |
| Total | 91 | 7 | 100% | 84 | 100% | 100% |

**Source:** National Center for Child Death Review Case Reporting System. Resident population estimates were from the 2000 Census, children under 18 years of age. **Data Note:** Number of deaths includes residents and non-resident deaths. Summation of percentages may not total 100% due to rounding.

Of the 91 motor vehicle and other transport child deaths comprehensively reviewed, the county of incident was available for all. Of the 84 resident deaths the county of incident for 50% (n=42) was Honolulu County and the other 50% occurred on the Neighbor Island counties (n=42). The proportion of resident deaths that occurred in the Neighbor Island counties combined was much higher than the respective percent of resident populations (29%), while the proportion of resident deaths that occurred in Honolulu County was lower than the respective percent of resident population (71%).

***Race*** Table 25 shows the child deaths between 2001 and 2006 by motor vehicle or other transport by race.

**Table 25. Motor Vehicle and Other Transport Child Deaths by Race in Hawaii, Comprehensively Reviewed, 2001-2006 (N=91)**

| Race | Number of Deaths | Number of Non-Resident Deaths | Percent of Non-Resident Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|---|
| Native Hawaiian | 43 | 0 | 0% | 43 | 51% | 32% |
| Asian | 19 | 1 | 14% | 18 | 21% | 39% |
| Other ethnic groups | 29 | 6 | 57% | 23 | 27% | 29% |
| Total | 91 | 7 | 100% | 84 | 100% | 100% |

**Source:** National Center for Child Death Review Case Reporting System. Resident population estimates were from OHSM 2003-2004 Hawaii Household Survey, children under 18 years of age. **Data Note:** Number of deaths includes residents and non-resident deaths. Summation of percentages may not total 100% due to rounding.

Of the 91 motor vehicle and other transport child deaths comprehensively reviewed, information on race was available for all. Of the 84 resident deaths, the race for:

- 51% (n=43) were Native Hawaiian;
- 21% (n=18) were Asian;
- 27% (n=23) were all other ethnic groups combined.

The proportion of resident deaths for Native Hawaiian was more than 1.5 times greater than the respective percent of resident populations (Native Hawaiian=32%), while the proportion of Asian resident deaths was nearly half of their resident population (Asian=39%).

***Age*** Table 26 shows the child deaths between 2001 and 2006 by motor vehicle and other transport according to age.

**Table 26. Motor Vehicle and Other Transport Child Deaths by Age in Hawaii, Comprehensively Reviewed, 2001-2006 (N=91)**

| Age (Years) | Number of Deaths | Number of Non-Resident Deaths | Percent of Non-Resident Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|---|
| Infant | 5 | 0 | 0% | 5 | 6% | 5% |
| 1-4 | 10 | 0 | 0% | 10 | 12% | 21% |
| 5-9 | 7 | 2 | 29% | 5 | 6% | 29% |
| 10-14 | 16 | 3 | 43% | 13 | 16% | 28% |
| 15-17 | 53 | 2 | 29% | 51 | 61% | 17% |
| Total | 91 | 7 | 100% | 84 | 100% | 100% |

**Source:** National Center for Child Death Review Case Reporting System. Resident population estimates were from the 2000 Census for the State of Hawaii, children under 18 years of age. **Data Note:** Number of deaths includes residents and non-resident deaths. Summation of percentages may not total 100% due to rounding.

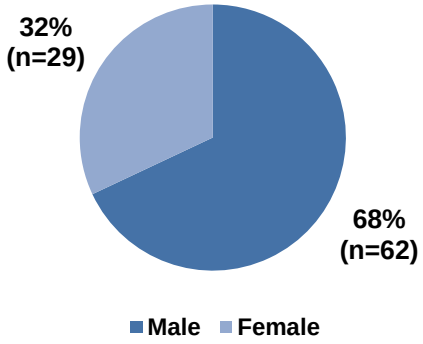
Of 91 motor vehicle and other transport child deaths, information on age was available for all. Of the 7 non-resident deaths, 43% (n=3) were children 10-14 years of age, 29% (n=2) were children 5-9 years of age, and 29% (n=2) were children 15-17 years of age. Of the 84 resident deaths:

- 61% (n=51) were children 15-17 years of age;
- 16% (n=13) were children 10-14 years of age;
- 12% (n=10) were children 1-4 years of age.

The proportion of motor vehicle and other transport child deaths, for children 15-17 years of age was threefold greater when compared to the respective percent of resident population (17%).

***Gender*** Figure20 shows the child deaths between 2001 and 2006 by motor vehicle and other transport according to gender.

**Figure 20. Motor Vehicle and Other Transport Child Deaths by Gender in Hawaii, Comprehensively Reviewed, 2001-2006 (N=91)**



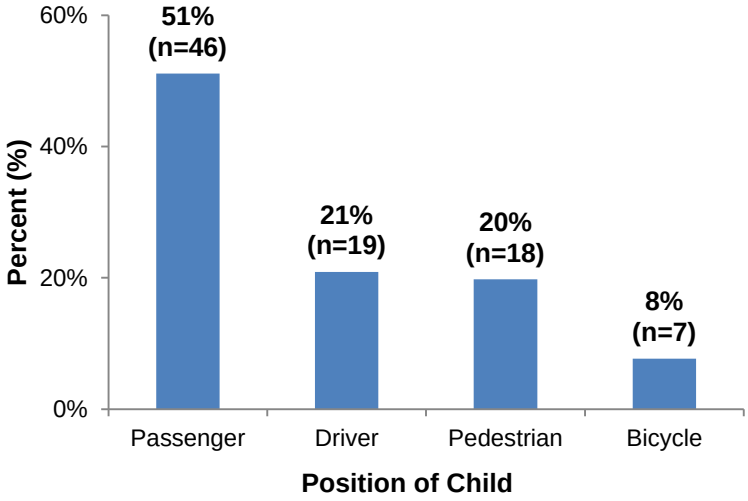

Of the 91 motor vehicle and other transport child deaths comprehensively reviewed, gender information was available for all. Of these 91 deaths, 68% (n=62) were male and 32% (n=29) were female.

**Source:** National Center for Child Death Review Case Reporting System. **Date Note:** Figure includes resident and non-resident deaths. Summation of percentages may not total 100% due to rounding.

## *Other Factors*

Figure 21 shows the child deaths between 2001 and 2006 by motor vehicle and other transport according to position. Position refers to where the child was riding in the car or whether they were outside of the car on a bicycle or walking.

**Figure 21. Motor Vehicle and Other Transport Child Deaths according to the Position in Hawaii, Comprehensively Reviewed, 2001-2006 (N=90)**




Of the 91 motor vehicle and other transport child deaths deaths, the positon of the child was identified for nearly all (n=90). Of these 90 deaths, the child was a passenger in 51% (n=46), a driver in 21% (n=19), a pedestrian in 20% (n=18), and on a bicycle in 8% (n=7).

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For motor vehicle and other transport child deaths by position,1 death was blank.Summation of percentages may not total 100% due to rounding.

Of the 91 motor vehicle and other transport child deaths comprehensively reviewed, information on the cause of the incident was available for 91% (n=83); 5 deaths were blank and 3 were unknown. More than one cause was reported for 49 children.

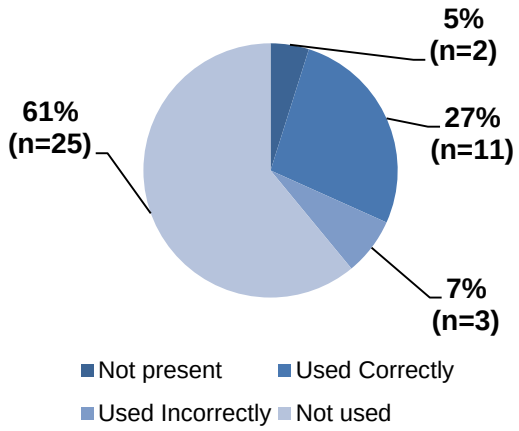
The cause of the incident identified among the 83 children included:

- 52% (n=43) had been speeding over the limit;
- 29% (n=24) had been reckless;
- 29% (n=24) had been under the influence of drugs or alcohol;
- 42% (n=35) had other causes listed.

Other causes included unsafe speed for conditions, adverse weather conditions, inappropriate child seats, fatigue, backed over, poor visibility, inattention, and racing.

Figure 22 shows the child deaths between 2001 and 2006 by the use of a seatbelt in a motor vehicle and other transport.

**Figure 22. Motor Vehicle and Other Transport Child Deaths by Use of Seatbelt in Hawaii, Comprehensively Reviewed, 2001-2006 (N=41)**



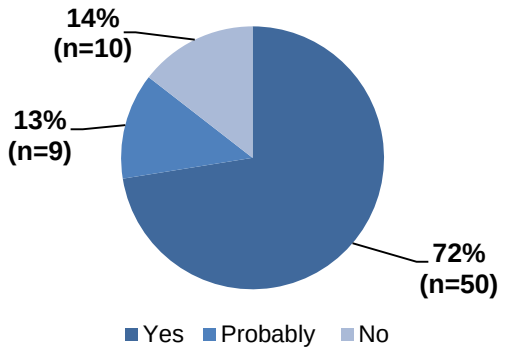

Of the 91 motor vehicle and other transport child deaths comprehensively reviewed, information related to seatbelt use was available for 56% (n=51). Of these 51 deaths, a seatbelt was not required in 10 deaths. Of the 41 deaths in which a seatbelt was required, 61% (n=25) a seatbelt was not used, 7% (n=3) a seatbelt was used incorrectly, 5% (n=2) a seatbelt was needed but not present, and in only 27% (n=11) was a seatbelt used correctly.

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For seatbelt use, 6 deaths were blank and 34 were indicated as unknown. Summation of percentages may not total 100% due to rounding.

## *Omission (neglect) and Commission (abuse) Factors*

Figure 23 shows the child deaths between 2001 and 2006 by motor vehicle or other transport through acts of omission (neglect) or commission (abuse).

**Figure 23. Motor Vehicle and Other Transport Child Deaths by Contribution of Act(s) of Omission (neglect) or Commission (abuse) to Child Deaths in Hawaii, Comprehensively Reviewed, 2001-2006 (N=69)**




Of the 91 motor vehicle and other transport deaths, 76% (n= 69) had a determination that an act(s) of omission (neglect) or commission (abuse) caused or contributed to the death. Of these 69 deaths, 72% (n=50) involved an act(s) that caused or contributed to the deaths, 13% (n=9) probably involved an act(s) and 14% (n=10) where no act caused or contributed to the deaths.

**Source:** National Center for Child Death Review Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For acts of omission (neglect) or commission (abuse) that caused or contributed to the death, 12 deaths were blank and 10 deaths were indicated as unknown. Summation of percentages may not total 100% due to rounding.

Of 69 motor vehicle and other transport related deaths with information related to omission (neglect) or commission (abuse), 99% (n=68) had information related to the type of act that caused or contributed to the death. One death was blank. Two deaths had both a cause and contributing act identified. The types of act(s) identified that caused or contributed to these 68 motor vehicle and other transport deaths were:

- 25% (n=17) poor or absent supervision;
- 4% (n=3) child neglect;
- 43% (n=29) other negligence;
- 18% (n=12) other.

Other acts identified included youth driver issues, legal issues, local cultural practice, poor visibility for a driver who was pulling out of a driveway and could not see, an unsupervised infant crawling, and vehicle modification after a previous crash.

# *Recommendations from Local Team Reviews*

## ***Improvements in System Responses***

- Integrate all aspects of motor vehicle safety for youth in existing programs.
- Increase awareness about the vulnerabilities of youth who experience head trauma related to motor vehicle events.
- Enforcement of laws for children to ride in the back seats of motor vehicles and use restraints including car seats, booster seats and seat belts.
- Expansion of public service announcements to improve the dissemination of information about laws, best practices such as helmet use, and the critical need for vigilance in supervising children who are near motor vehicles or use motor or non-motor (bicycle) vehicle for recreation.
- Add occupant protection questions to the Behavioral Risk factor Surveillance Survey and Youth Risk Behavior Survey to expand data sources for planning.
- Ongoing education and increased incentives and enforcement of existing bike regulations and laws by schools and other community organizations.

## ***Prevention Strategies to Avert Future Child Deaths***

- Advocates in Hawaii have increased adoption of evidence-based strategies. Strategies include primary seat belt laws (by allowing police to stop vehicles solely for a safety belt violation), legislation for ignition interlock devised (devices that disable a vehicle's ignition after detection of alcohol on the driver's breath) and multi-component programs with community mobilization (programs that include sobriety checkpoints, education and awareness raising).
- Existing community coalitions address traffic safety through programs and messages on graduated licensing, child passenger and pedestrian safety.
- Media messages are needed to inform adults on how to protect toddlers from entrapment, roll over and back over from motor vehicle events.

## ***Policy Recommendations for Agencies Working on Behalf of Children***

- Support Highway Safety Plan 2007-2012 strategies to reduce aggressive driving, impaired driving, and safeguarding pedestrians.

- Strengthen provisional licensing in the graduated licensing law to include mandatory sentencing and suspension or delay of license when a moving violation occurs and require these youth to take additional traffic safety classes.
- Promote state legislative action for age of all terrain vehicle (ATV) driver, safety equipment and location approved for ATV use as well as federal legislation mandating safety equipment (i.e. speed inhibitor) and supervision of minors using ATVs.
- Recommend development of PSA's to alert the public on the risk of children dying from hyperthermia when left in cars and inform the public about Act 170, which was passed in June 2008. Hospital will run PSAs on in-house TV station.
- Continue Police enforcement and public education about laws protecting pedestrians in crosswalks.
- Improved crosswalk visibility and traffic calming measures are needed for crosswalks near schools. Pedestrian Education programs at local schools & Bus Stop Realignment Program.
- Increase the age for truck bed laws to prevent child passengers from riding in the truck bed.

# Asphyxia Deaths

Asphyxia includes suffocation, choking, and strangulation. It is an inability to breathe. Deaths due to suffocation result when the child is in a place or position where he or she is unable to breathe. Suffocation is caused by either overlay, positional asphyxia, covering of face or chest, choking, confinement or strangulation. Foreign objects, such as food, coins, window blind chords, or blankets can block internal or external airways. In 2000, 160 children age 14 years or younger in the U.S. died from an obstruction of the respiratory tract due to inhaled or ingested foreign bodies; 41% of these asphyxia deaths were caused by food items and 59% by nonfood objects.

Asphyxia deaths can be accidental, suicide, homicide or undetermined. Many incidents causing childhood choking, suffocation, and strangulation occur in the child's home. According to the Children's Safety Network, approximately 900 suspected Sudden Infant Death Syndrome (SIDS) deaths are actually deaths of suffocation by soft bedding.[xxxvii]

## *Manner of Death*

In Hawaii, there were 58 asphyxia child deaths identified from 2001-2006 and all were comprehensively reviewed. Of the 372 reviewed deaths, the primary cause for 16% (n=58) was asphyxia. Table 27 shows child deaths between 2001 and 2006 by asphyxia according to the manner of death.

**Table 27. Asphyxia Child Deaths by Manner of Death in Hawaii, Comprehensively Reviewed, 2001-2006 (N=58)**

| Manner | Number of Deaths | Percent of Deaths |
|---|---|---|
| Accident | 27 | 47% |
| Suicide | 24 | 41% |
| Homicide or Undetermined | 7 | 13% |
| Total | 58 | 100% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Summation of percentages may not total 100% due to rounding.

Of these 58 deaths, information on the manner of death was available for all. Of these 58 deaths:

- 47% (n=27) were accidental;
- 41% (n=24) were suicides;
- 13% (n=7) were homicide or undetermined.

## *Demographics*

***County*** Table 28 shows the child deaths between 2001 and 2006 by asphyxia according to the county of incident.

**Table 28. Asphyxia Child Deaths by County of Incident in Hawaii, Comprehensively Reviewed, 2001-2006 (N=58)**

| County | Number of Deaths | Percent of Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|
| Honolulu | 42 | 72% | 42 | 72% | 71% |
| Neighbor Island Counties | 16 | 28% | 16 | 28% | 29% |
| Total | 58 | 100% | 58 | 100% | 100% |

**Source:** National Center for Child Death Review Case Reporting System. Resident population estimates were from the 2000 Census for the State of Hawaii, children under 18 years of age. **Data Note:** Summation of percentages may not total 100% due to rounding.

Of the 58 asphyxia child deaths, the county of incident information was available for all. Of these, all were residents. Of these 58 resident deaths, the county of incident for72% (n=42) was Honolulu County and 28% for the neighbor island counties.

The proportion of asphyxia deaths was about the same as the respective percent of the resident populations for both Honolulu and neighbor island counties.

***Race*** Table 29 shows the child deaths between 2001 and 2006 by asphyxia according to race.

**Table 29. Asphyxia Child Deaths by Race in Hawaii, Comprehensively Reviewed, Hawaii, 2001-2006 (N=58)**

| Race | Number of Deaths | Percent of Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|
| Native Hawaiian | 28 | 48% | 28 | 48% | 32% |
| Asian | 15 | 26% | 15 | 26% | 39% |
| Other ethnic groups | 15 | 26% | 15 | 26% | 29% |
| Total | 58 | 100% | 58 | 100% | 100% |

**Source:** National Center for Child Death Review Case Reporting System. Resident population estimates were from OHSM 2003-2004 Hawaii Household Survey, children under 18 years of age. **Data Note:** Summation of percentages may not total 100% due to rounding.

Of the 58 asphyxia child deaths comprehensively reviewed, information on race was available for all deaths. Of these, all were residents. Of the 58 resident deaths, the race for:

- 48% (n=28) were Native Hawaiian;
- 26% (n=15) were Asian;
- 26% (n=15) were all other ethnic groups combined.

The proportion of asphyxia deaths was greater than the respective populations for both Native Hawaiians (Native Hawaiians 32%) while Asians were under represented for the respective population (39%).

***Age*** Table 30 shows child deaths between 2001 and 2006 by asphyxia according to age.

**Table 30. Asphyxia Child Deaths by Age in Hawaii, Comprehensively Reviewed, 2001-2006 (N=58)**

| Age (Years) | Number of Deaths | Percent of Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|
| Infant | 23 | 40% | 23 | 40% | 5% |
| 1-14 | 21 | 35% | 21 | 35% | 78% |
| 15-17 | 14 | 24% | 14 | 24% | 17% |
| Total | 58 | 100% | 58 | 100% | 100% |

**Source:** National Center for Child Death Review Case Reporting System. Resident population estimates were from the 2000 Census for the State of Hawaii, children under 18 years of age. **Data Note:** Summation of percentages may not total 100% due to rounding.

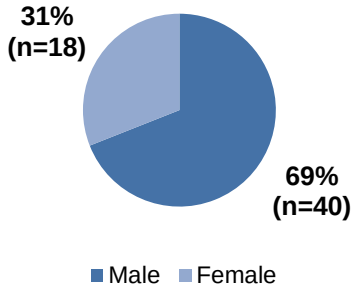
Of the 58 asphyxia child deaths comprehensively reviewed, information on the age was available for all. Of these, all were residents. Of these 58 resident deaths,

- 40% (n=23) were infants;
- 35% (n=21) were 1-14 years of age;
- 24% (n=14) were 15-17 years of age.

The proportion of asphyxia deaths for infants was nearly ten times the respective percent of resident population (5%), followed by children 15-17 years of age, which was greater than the respective percent of resident population (17%).

***Gender*** Figure 24 shows the child deaths between 2001 and 2006 by asphyxia according to gender.

**Figure 24. Asphyxia Child Deaths by Gender in Hawaii, Comprehensively Reviewed, 2001-2006 (N=58)**



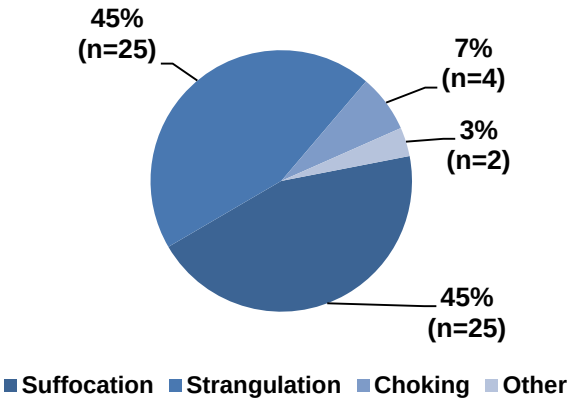

Of 58 asphyxia child deaths comprehensively reviewed, information on gender was available for all. Of these 58 deaths, 69% (n=40) were males and 31% (n=18) females.

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Summation of percentages may not total 100% due to rounding.

## *Other Factors*

Figure 25 shows the child deaths between 2001 and 2006 by asphyxia according to the type of event.

**Figure 25. Asphyxia Child Deaths by Type of Event in Hawaii, Comprehensively Reviewed, 2001-2006 (N=56)**




Of the 58 Asphyxia child deaths comprehensively reviewed, information on the type of event was available for nearly all (n=56). Of these 56 deaths, 45% (n=25) the asphyxia event was suffocation, 45% (n=25) the asphyxia event was strangulation, and 7% (n=4) the asphyxia event was due to choking.

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Summation of percentages may not total 100% due to rounding.

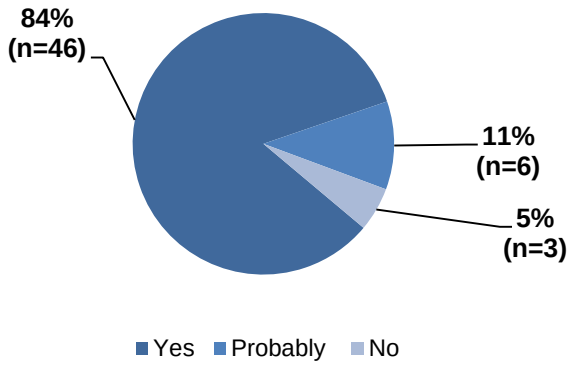
Of the 25 asphyxia deaths due to suffocation comprehensively reviewed, information on the event causing the event was available for 88% (n=22). Three deaths were listed as other, but did not have any accompanying information so were considered unknown. The action identified among the 22 children included 86% (n=19), which were a sleep-related event (e.g., bedding, overlay, wedged).

Of the 25 asphyxia deaths due to strangulation comprehensively reviewed, information on the object causing the event was available for 84% (n=21); 1 death was blank and 3 were unknown. Objects used in the event among the 21 children included belts, ropes, shoelaces, leashes, electric cords and crib sheet.

## *Omission (neglect) and Commission (abuse) Factors*

Figure 26 shows the child deaths between 2001 and 2006 by asphyxia according to acts of omission (neglect) or commission (abuse).

**Figure 26. Asphyxia Child Deaths by Contribution of Act(s) of Omission (neglect) or Commission (abuse) to Child Deaths in Hawaii, Comprehensively Reviewed, 2001-2006, (N=55)**




Of the 58 asphyxia deaths, 95% (n=55) had a determination that an act(s) of omission (neglect) or commission (abuse) caused or contributed to the death. Of these, 84% (n=46) involved an act(s) that caused or contributed to the deaths, 11% (n=6) probably involved an act(s) and 5% (n=3) where no act caused or contributed to the deaths.

**Source:** National Center for Child Death Review Reporting System. **Data Note:** For acts of omission (neglect) or commission (abuse) that caused or contributed to the death, 1 death was blank and 2 deaths were indicated as unknown. Summation of percentages may not total 100% due to rounding.

Of the 55 asphyxia child deaths information on omission (neglect) or commission (abuse) related to the type of act that caused or contributed to the death was available for 96% (n=53); 1 death was blank and 1 was indicated as unknown. Three deaths had both a cause and contributing act identified. The types of act(s) identified that caused or contributed to these 53 asphyxia deaths included acts of poor or absent supervision, acts of child abuse or neglect or other. Almost one-half of these deaths were suicides.

Unsafe infant sleep practices accounted for the majority of other acts followed by caregiver failure to seek medical follow-up or not able to identify the necessary medical follow up needed for a child with acute or chronic conditions, family arguments, and lastly the absence of a doll re-enactment during investigation of an infant death scene.

# *Recommendations from Local Team Reviews*

## ***Improvements in System Responses***

- The medical home provide parents information on safety.  Promoting safe sleep can reduce suffocations caused by soft bedding.
- Educating families about age-appropriate food items as well as age-appropriate toys.
- Ensuring that families are aware of the importance of supervising children while they are eating and playing.
- Educating families about possible hazards in the home.
- Suicide prevention is covered later in this report.

## ***Prevention Strategies to Avert Future Child Deaths***

- Public awareness about risks of suffocation and burial from digging deep holes in the sand is recommended.

# Drowning Deaths

In the U.S., some 838 children 14 years of age and under drowned during 2002.[xxxviii] Young children are the most vulnerable for drowning as it only takes one inch of water and a few seconds for a young child to die. Supervision is needed for children around water at all times. According to the National Conference of State Legislators, at least 12 States have laws related to swimming and pool safety, which may include certified lifeguards on duty, fences, alarms, safety covers, light fixture requirements, and safe spa and pool drain standards.[xxxix] Isolation pool fences and lifeguards protect children from drowning. Other strategies include educating individuals who supervise children engaged in any water activities; equip swimmers, and those supervising them, with water safety skills including CPR training.

## *Manner of Death*

In Hawaii, there were 32 drowning child deaths identified from 2001-2006 and 29 deaths were comprehensively reviewed. Three deaths had insufficient information for local teams to review comprehensively. Of the 372 reviewed deaths, the primary cause for 8% (n=29) was drowning. Table 31 shows the child deaths between 2001 and 2006 by drowning according to the manner of death.

**Table 31. Drowning Child Deaths by Manner of Death in Hawaii, Comprehensively Reviewed, 2001-2006 (N=29)**

| Manner | Number of Deaths | Percent of Deaths |
|---|---|---|
| Accident | 27 | 93% |
| Undetermined | 2 | 7% |
| Total | 29 | 100% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Number of deaths includes resident and non-resident deaths. Summation of percentages may not total 100% due to rounding.

Of 29 drowning deaths comprehensively reviewed, information on the manner of death was available for all. Of these 29 deaths, the manner of death for:

- 93% (n=27) was accident;
- 7% (n=2) was undetermined.

## *Demographics*

***County*** Table 32 shows the child deaths by drowning according to the county of incidence.

**Table 32. Drowning Child Deaths by County of Incident in Hawaii, Comprehensively Reviewed, 2001-2006 (N=29)**

| County | Number of Deaths | Number of Non-Resident Deaths | Percent of Non-Resident Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|---|
| Honolulu | 13 | 2 | 50% | 11 | 44% | 71% |
| Neighbor Island Counties | 16 | 2 | 50% | 14 | 56% | 29% |
| Total | 29 | 4 | 100% | 25 | 100% | 100% |

**Source:** National Center for Child Death Review Reporting System. Resident population estimates were from the 2000 Census for the State of Hawaii, children under 18 years of age. **Date Note**: Number of deaths includes resident and non-resident deaths. Summation of percentages may not total 100% due to rounding.

Of 29 drowning deaths comprehensively reviewed, the county of incident was available for all. Of these 29 deaths, 86% (n=25) were residents and 14% (n=4) were non-residents. Of the 25 resident deaths, the county of incident for:

- 44% (n=13) were Honolulu County;
- 56% (n=16) wereone of the Neighbor Island Counties.

The proportion of drowning deaths on neighbor island was nearly two-fold greater than the respective percent of the resident population (29%).

***Race*** Table 33 shows the child deaths from 2001 to 2006 by drowning according to race.

**Table 33. Drowning Child Deaths by Race in Hawaii, Comprehensively Reviewed, 2001-2006 (N=29)**

| Race | Number of Deaths | Number of Resident Deaths | Percent of Non-Resident Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|---|
| Native Hawaiian | 13 | 0 | 0% | 13 | 52% | 32% |
| Asian | 6 | 2 | 50% | 4 | 16% | 39% |
| Other ethnic groups | 10 | 2 | 50% | 8 | 32% | 29% |
| Total | 29 | 4 | 100% | 25 | 100% | 100% |

**Source**: National Center for Child Death Review Case Reporting System. Resident population estimates were from OHSM 2003-2004 Hawaii Household Survey, children under 18 years of age. **Data Note:** Number of deaths includes resident and non-resident deaths. Summation of percentages may not total 100% due to rounding.

Of the 29 drowning child deaths comprehensively reviewed, information on the race was available for all. Of these deaths, 86% (n=25) were residents and 14% (n=4) were non-residents. Of the 25 resident deaths, the race for:

- 52% (n=13) were Native Hawaiian;
- 16% (n=4) was Asian;
- 28% (n=8) wereall other ethnic groups combined.

The proportion of drowning deaths for Native Hawaiian children was greater than the respective percent of resident populations (32%). Whereas, the proportion of drowning deaths among Asian children was lower than the respective resident population (39%).

***Age*** Table 34 shows the child deaths between 2001 and 2006 by drowning according to age.

**Table 34. Drowning Child Deaths by Age in Hawaii, Comprehensively Reviewed, 2001-2006 (N=29)**

| Age (Years) | Number of Deaths | Number of Non-Resident Deaths | Percent of Non-Resident Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|---|
| Infant | 4 | 0 | 0% | 4 | 16% | 5% |
| 1-4 | 13 | 1 | 25% | 12 | 48% | 21% |
| 5-9 | 1 | 0 | 0% | 1 | 4% | 29% |
| 10-14 | 4 | 1 | 25% | 3 | 12% | 28% |
| 15-17 | 7 | 2 | 50% | 5 | 20% | 17% |
| Total | 29 | 4 | 100% | 25 | 100% | 100% |

**Source:** National Center for Child Death Review Case Reporting System. Resident population estimates were from the 2000 Census for the State of Hawaii, children under 18 years of age. **Data Note:** Number of deaths includes resident and non-resident deaths. Summation of percentages may not total 100% due to rounding.

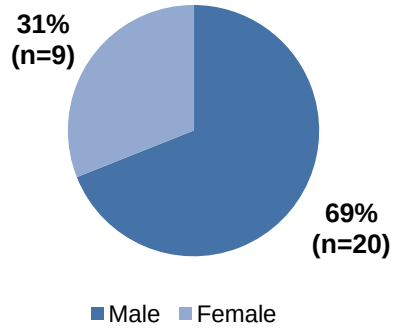
Of 29 drowning deaths comprehensively reviewed, information on age was available for all. Of these deaths, 86% (n=25) were residents and 14% (n=4) were non-residents. Of the 4 non-resident deaths, 50% (n=2) were children 15-17 years of age, 25% (n=1) was a child 10-14 years of age, and 25% (n=1) was a child 1-4 years of age. Of the 25 resident deaths:

- 48% (n=12) were children 1-4 years of age;
- 20% (n=5) were children 15-17 years of age;
- 16% (n=4) were infants.

The proportion of drowning deaths for resident infants was triple, for children 1-4 years of age was more than double, and for children 15-17 years of age was somewhat higher than the respective percent of resident populations (infant=5%, 1-4 years of age=21%, and 15-17 years of age=17%). Whereas, children 5-9 and 10-14 years of age had proportions lower than the respective percent of resident populations (5-9 years of age=29% and 10-14 years of age=28%).

***Gender*** Figure 27 shows the child deaths between 2001 and 2006 by drowning according to gender.

**Figure 27. Drowning Child Deaths by Gender in Hawaii, Comprehensively Reviewed, 2001-2006 (N=29)**




Of 29 comprehensively reviewed drowning child deaths, information on gender was available for all. Of these 29 deaths, 69% (n=20) were male and 31% (n=9) female.

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. Summation of percentages may not total 100% due to rounding.

# *Other Factors*

***Place of Drowning*** It is important to look at the place of drowning as a possible risk factor for drowning because childhood drowning typically occurs in a number of settings -- pools, hot tubs, beaches, bathtubs, buckets, catchment systems and culverts. Table 35 shows the child drowning deaths according to place.

**Table 35. Drowning Child Deaths by Place of Drowning in Hawaii, Comprehensively Reviewed, 2001-2006 (N=27)**

| Place of Drowning | Number of Deaths | Number of Non-Resident Deaths | Percent of Non-Resident Deaths | Number of Resident Deaths | Percent of Resident Deaths |
|---|---|---|---|---|---|
| Pool/hot tub/spa | 11 | 2 | 50% | 9 | 39% |
| Ocean | 6 | 2 | 50% | 4 | 17% |
| Bathtub | 5 | 0 | 0% | 5 | 22% |
| Lake/river/pond | 3 | 0 | 0% | 3 | 13% |
| Other | 2 | 0 | 0% | 2 | 9% |
| Total | 27 | 4 | 100% | 23 | 100% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Figure includes resident and non-resident deaths. Summation of percentages may not total 100% due to rounding.

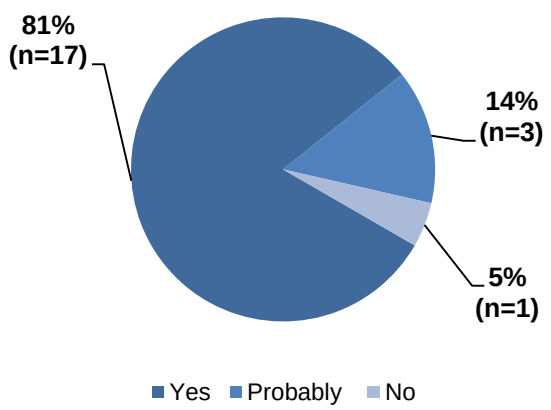
Of 29 drowning child deaths comprehensively reviewed, information on the place of drowning was available for 93% (n=27). Of these deaths, 85% (n=23) were residents and 15% (n=4) were non-residents. Of the 4 non-resident deaths, 50% (n=2) occurred in the ocean, and 50% (n=2) occurred in a pool/hot tub/spa. Of the 23 resident deaths:

- 39% (n=9) occurred in a pool/hot tub/spa;
- 22% (n=5) occurred in a bath tub;
- 17% (n=4) occurred in the ocean;
- 13% (n=3) occurred in a lake/river/pond.

## *Omission (neglect) and Commission (abuse) Factors*

A brief lapse in supervision, leaving a child unattended for a few seconds is enough time for a child to drown when a child falls into a pool or is left alone in the bathtub. Figure 28 shows the child deaths between 2001 and 2006 by drowning according to acts of omission or commission.

**Figure 28. Drowning Child Deaths by Contribution of Act(s) of Omission or Commission to Child Deaths in Hawaii, Comprehensively Reviewed, 2001-2006, (N=21)**




Of the 29 drowning deaths, 72% (n=21) had a determination that an act(s) of omission or commission caused or contributed to the death. Of these 81% (n=17) involved an action(s) that caused or contributed to the deaths, 14% (n=3) probably involved an act(s) and 5% (n=1) where no act caused or contributed to the deaths.

**Source:** National Center for Child Death Review Reporting System. **Data Note:** Figure includes resident and non-resident deaths. For contribution of act(s) of omission or commission to drowning child deaths, 4 deaths were blank and 4 deaths were indicated as unknown. Summation of percentages may not total 100% due to rounding.

Of 21 drowning deaths with information related to omission or commission, all had information related to the type of act that caused or contributed to the death. For drowning related deaths, one death had both a cause and contributing act identified. The types of act(s) identified that caused or contributed to these 21 drowning deaths included:

- 86% (n=18) resulted from an act of poor or absent supervision;
- 5% (n=1) resulted from an act of other negligence;
- 10% (n=2) resulted from an act of other.

# *Recommendations from Local Team Reviews*

### ***Improvements in System Responses***

- Agencies serving young families integrate warnings to families that a drowning can occur in only a few inches of water.

### ***Prevention Strategies to Avert Future Child Deaths***

- Promote beach safety by following strict guidelines: allow swimming only at lifeguarded beaches, never swim alone and when in doubt, do not go out.
- Institute a Memorial Ceremony at drowning sites where frequent deaths have occurred to remember all who have died.
- Educate parents about bathroom safety. A bath seat is not a substitute for supervision.
- Expand community swimming classes and ocean safety classes.

### ***Policy Recommendations for Agencies Working on Behalf of Children***

- Advocate for mandated school age education on the dangers of swimming unattended before school breaks, on an annual basis.
- Mandate lifeguards or adult supervision of children at hotel pools.
- Building Codes include protective measures, most notably: four sided fencing with a self-closing, self-latching gate, a minimum fence height and, if the home is one of the four sides of the protective fence, locks and/or alarms are needed on any access door to the pool area.
- More safety messages about ocean safety and water safety, in general.

# Suicide Deaths

In the U.S. suicide is the third leading cause of death for youth between the ages of 10 and 24 and results in the loss of approximately 4,500 lives each year.[xl] Suicide is defined as death from injury, poisoning, or suffocation where there is evidence that a self-inflicted act led to the person's death. It is important to recognize suicide warning signs, which include talking about harming or killing oneself. Knowing risk factors and responding appropriately to warning signs can be effective at preventing youth suicide.

The U.S. suicide death rate decreased from 7.44 for youth 15-19 years of age per 100,000 in 2002 to 7.32 per 100,000 in 2006. Hawaii was one of 13 states that reported a higher rate of youth suicide in 2006 than the rate reported in 2002.[xli]

## *Primary Cause of Death*

In Hawaii, there were 29 suicide child deaths identified from 2001-2006 and all were comprehensively reviewed. Of the 372 reviewed deaths, the manner of death for 8% (n=29) was suicide. Table 36 shows the child deaths by suicide according to the primary cause. Primary cause refers to whether it was through asphyxia, a weapon, or a fall or crush.

**Table 36. Suicide Child Deaths by Primary Cause in Hawaii, Comprehensively Reviewed, 2001-2006 (N=29)**

| Primary Cause | Number of Deaths | Percent of Deaths |
|---|---|---|
| Asphyxia | 24 | 83% |
| Weapon, including person's body part | 4 | 14% |
| Fall or crush | 1 | 3% |
| Total | 29 | 100% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Summation of percentages may not total 100% due to rounding.

Of 29 suicide deaths comprehensively reviewed, information on the primary cause of death was available for all. Of these 29 deaths, the primary cause of death for:

- 83% (n=24) asphyxia
- 14% (n=4) weapon
- 3% (n=1) was fall or crush

# *Demographics*

***County*** Table 37 shows the child deaths between 2001 and 2006 by suicide through the county of incident.

**Table 37. Suicide Child Deaths by County of Incident in Hawaii, Comprehensively Reviewed, 2001-2006 (N=29)**

| County | Number of Deaths | Percent of Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|
| Honolulu | 19 | 66% | 19 | 66% | 71% |
| Neighbor Island Counties | 10 | 34% | 10 | 34% | 29% |
| Total | 29 | 100% | 29 | 100% | 100% |

**Source:** National Center for Child Death Review Case Reporting System. Resident population estimates were from the 2000 Census for the State of Hawaii, children under 18 years of age. **Data Note:** Summation of percentages may not total 100% due to rounding.

Of the 29 suicide child deaths comprehensively reviewed, county of incident information was available for all. Of these deaths, all were residents. Of these 29 deaths, the county of incident for:

- 66% (n=19) were Honolulu County;
- 34% (n=20) were one of the Neighbor Island Counties.

The proportions of deaths were somewhat higher on the Neighbor Island Counties than expected based on the respective percent of resident population (29%).

***Race*** Table 38 shows the child deaths between 2001 and 2006 by suicide according to race.

**Table 38. Suicide Child Deaths by Race in Hawaii, Comprehensively Reviewed, 2001-2006 (N=29)**

| Race | Number of Deaths | Percent of Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|
| Native Hawaiian | 10 | 35% | 10 | 35% | 32% |
| Asian | 10 | 35% | 10 | 35% | 39% |
| Other ethnic groups | 9 | 31% | 9 | 31% | 29% |
| Total | 29 | 100% | 29 | 101% | 100% |

**Source:** National Center for Child Death Review Case Reporting System. Resident population estimates were from OHSM 2003-2004 Hawaii Household Survey, children under 18 years of age. **Data Note:** Summation of percentages may not total 100% due to rounding.

Of the 29 suicide child deaths comprehensively reviewed, race information was available for all. Of these, all were residents. Of these 29 deaths, the race for:

- 35% (n=10) were Native Hawaiian;
- 35% (n=10) were Asian;
- 31% (n=9) were all other ethnic groups combined.

The proportions of suicide deaths for Native Hawaiian children were greater than the respective resident population (32%).

***Age*** Table 39 shows the child deaths between 2001 and 2006 by suicide according to age.

**Table 39. Suicide Child Deaths by Age in Hawaii, Comprehensively Reviewed, 2001-2006 (N=29)**

| Age (Years) | Number of Deaths | Percent of Deaths | Number of Resident Deaths | Percent of Resident Deaths | Percent of Resident Population |
|---|---|---|---|---|---|
| 10-14 | 10 | 35% | 10 | 35% | 28% |
| 15-17 | 19 | 66% | 19 | 66% | 17% |
| Total | 29 | 100% | 29 | 100% | 100% |

**Source:** National Center for Child Death Review Case Reporting System. Resident population estimates were from the 2000 Census for the State of Hawaii, children under 18 years of age. **Data Note:** Summation of percentages may not total 100% due to rounding.

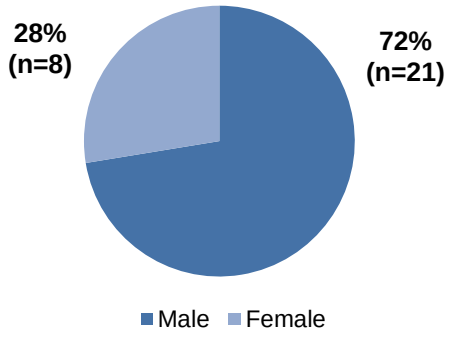
Of the 29 suicide child deaths comprehensively reviewed, age was available for all. Of these, all were residents. Of these:

- 66% (n=19) were children 15-17 years of age
- 35% (n=10) were children 10-14 years of age

The proportion of suicide deaths for 10-14 and 15-17 years of age was greater than the respective resident population (15-17 years of age=17% and 10-14 years of age=28%). No suicide deaths were reported for children less than 10 years of age.

***Gender*** Figure 29 is a pie chart and shows the child deaths between 2001 and 2006 by suicide according to gender.

**Figure 29. Suicide Child Deaths by Gender in Hawaii, Comprehensively Reviewed, 2001-2006 (N=29)**




Of 29 suicide child deaths comprehensively reviewed, information on the gender was available for all. Of these29 deaths, 72% (n=21) were males and 28% (n=8) were females

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Summation of percentages may not total 100% due to rounding.

## *Other Factors*

Suicide rates are influenced by many factors, including biological, psychological, social, moral, political, and economic factors.[xlii] CDR reports circumstances identified and reasons for suicide as obtained from various agencies. Table 40 shows the child deaths by suicide according to circumstance.

**Table 40. Suicide Child Deaths by Circumstances in Hawaii, Comprehensively Reviewed, 2001-2006 (N=29)**

| Circumstances | Number of Yes | Number of No | Percent of Deaths |
|---|---|---|---|
| Child talked about suicide | 12 | 10 | 55% |
| Prior suicide threats were made | 9 | 12 | 43% |
| Child left a suicide note | 6 | 19 | 24% |
| Prior attempts were made | 5 | 15 | 25% |
| History of self mutilation | 4 | 14 | 22% |
| Suicide was completely unexpected | 3 | 8 | 27% |
| History of running away | 3 | 13 | 19% |
| There is a family history of suicide | 1 | 6 | 14% |
| Suicide was part of a murder-suicide | 1 | 22 | 4% |
| Suicide was part of a suicide pact | 1 | 22 | 4% |
| Suicide was part of a suicide cluster | 0 | 23 | 0% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** Concerning circumstances in child suicide: for child talked about suicide: 4 deaths were blank and 3 deaths were indicated as unknown; for prior suicide threats were made: 4 deaths were blank and 4 deaths were indicated as unknown; for child left a suicide note: 2 deaths were blank and 2 deaths were indicated as unknown; for prior attempts were made: 4 deaths were blank and 5 deaths were indicated as unknown; for history of self mutilation: 5 deaths were blank and 6 deaths were indicated as unknown; for suicide was completely unexpected: 4 deaths were blank and 14 deaths were indicated as unknown; for history of running away: 5 deaths were blank and 8 were indicated as unknown; for there is a family history of suicide: 6 deaths were blank and 16 deaths were indicated as unknown; for suicide was part of a murder-suicide: 6 deaths were blank; for suicide pact: 6 deaths were blank; and for suicide cluster: 6 deaths were blank. More than one circumstance could be selected so the summation of the individual percents in the table will exceed 100%. 11 deaths had more than 1 circumstance recorded.

Of the 29 suicide child deaths, the child for:

- 55% (n=12) had talked about suicide;
- 43% (n=12) had made prior suicide threats.

Of the other circumstances, the child for:

- 24% (n=6) had left a suicide note;
- 25% (n=5) had made prior attempts;
- 22% (n=4) had a history of self-mutilation;
- 27% (n=3) had a completely unexpected act.

Table 41 shows the child deaths between 2001 and 2006 by suicide according to the leading reason.

**Table 41. Suicide Child Deaths by Leading Reason in Hawaii, Comprehensively Reviewed, 2001-2006 (N=29)**

| Leading Reasons that may have contributed to child's death | Number of Deaths | Percent of Deaths |
|---|---|---|
| Family discord | 8 | 29% |
| Argument with boyfriend/girlfriend | 7 | 25% |
| Argument with parent | 6 | 21% |
| School failure | 6 | 21% |
| New school or other school problems | 6 | 21% |
| Breakup with boyfriend/girlfriend | 4 | 14% |
| Parent divorce | 4 | 14% |
| Physical abuse/assault | 2 | 7% |
| Problems with the law | 2 | 7% |
| Religious/cultural issues | 2 | 7% |
| Bullying as victim | 1 | 4% |
| Bullying as perpetrator | 1 | 4% |
| Rape/sexual abuse | 1 | 4% |
| Job problems | 1 | 4% |
| Money problems | 1 | 4% |
| Involvement in computer or video gaming | 1 | 4% |
| Other reason | 17 | 61% |

**Source:** National Center for Child Death Review Case Reporting System. **Data Note:** For leading reasons for child suicide, 1 death was indicated as unknown. More than one leading reason could be selected so the summation of the individual percents in the table will exceed 100%. 18 deaths had more than one reason.

Of the 29 suicide deaths comprehensively reviewed, information on the leading reasons for suicide were available for nearly all (n=28). Of these 28 deaths, the child for:

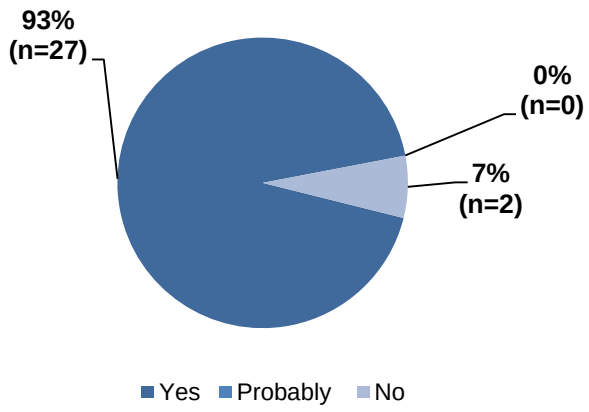
- 29% (n=8) had family discord;
- 25% (n=7) had an argument with boyfriend or girlfriend;
- 21% (n=6) had an argument with a parent;
- 21% (n=6) had school failure;
- 21% (n=6) had a new school or other school problems.

Although often singular events, the remaining reasons cited included: death of a friend or relative, physical abuse or assault, problems with the law, religious and cultural issues, bullying as victim and perpetrator, rape and sexual abuse, job problems, money problems, involvement in computer or video gaming, and unknown or other. More than one reason was reported for 18 children.

# *Omission (neglect) and Commission (abuse) Factors*

Figure 30 shows the child deaths between 2001 and 2006 by suicide according to acts of omission and commission**.**

**Figure 30. Suicide Child Deaths by Contribution of Act(s) Omission or Commission to Child Deaths in Hawaii, Comprehensively Reviewed, 2001-2006, (N=29)**




Of the 29 suicide deaths, all had a determination that an act(s) of omission or commission caused or contributed to the death. Of these 93% (n=27) involved an act(s) that caused or contributed to the deaths, 7% (n=2) probably involved an act(s) that caused or contributed to the deaths and 0% (n=0) where no act caused or contributed to the deaths.

**Source:** National Center for Child Death Review Reporting System. **Data Note:** Summation of percentages may not total 100% due to rounding.

Of 29 suicide deaths with information related to omission or commission, all had information related to the type of act that caused or contributed to the death; 1 death had both a cause and contributing act identified. The types of acts identified that caused or contributed to these 29 suicide deaths included:

- 100% (n=29) had an act of suicide
- 3% (n=1) had an other act (a family argument)

# *Recommendations from Local Team Reviews*

## ***Improvements in System Responses***

- Collaborate with the Hawaii's Suicide Prevention Task Force (SPTF) to raise awareness about the mental health and substance abuse youth suicide issues.
- Suicide Task force to continue efforts to support families'efforts to grieve and cope after a suicide event in the family without resorting to substance abuse.
- Support the Injury Prevention and Control Plan, which includes (1) Increase knowledge and understanding about suicide prevention through Gatekeeper training, public awareness campaign, and promoting and supporting research on suicide and prevention (2) Broaden access to screening services.

## ***Prevention Strategies to Avert Future Child Deaths***

- Support statewide suicide prevention plan to increase community awareness about teen suicide. Medical home screening for domestic violence and male mentoring support for males whose father is absent.
- Early detection and intervention of children with high risk for suicide by DOE Comprehensive Student Support System (CSSS) and the DOE Behavioral Specialist Counselors: Referral of any student identified by IDA or 504 as severely emotionally impacted (DMS IV) to higher end help such as DOH CAMD and good retention of records per FERPA guidelines for data collection and prevention action plans.

## ***Policy Recommendations for Agencies Working on Behalf of Children***

- Policies to integrate assessment, referral and skills training to recognize any youth at risk and make timely referrals.

# CHAPTER 6-STRENGTHENING THE CDR PROCESS

Strategies to improve the CDR process include a need for improved data collection, analysis, reporting, building partnerships and standard protocols for the investigation of infant and child deaths to better understand and identify trends, patterns, and gaps in service delivery and other issues.

- CDC identified the National Center for CDR & web based data collection tool as the most efficient system to integrate SUID death investigation information. Hawaii requested use of a web based tool, the Case Reporting System Version 2.1S to expand data and understanding about the process of certifying deaths.

- Multi-race reporting is a goal for the CDR program. The CDR program will work with other government agencies and Department of Health Programs to determine a method for reporting.

- Hawaii CDR is developing a procedure to validate information received from OHSM for screening and entry of CDR Team findings into the CDR data system after comprehensive team reviews for annual reporting.

- Training in CDR data collection is needed for all participating staff and agencies to improve data collection and interpretation.

- New local team chairs and members need to be oriented on data entry, local team management and the new on-line training modules, created by the National Center for CDR to orient new local team participants.

- National efforts are needed to address the legal barriers preventing access to school data.

Hawaii CDR needs to develop and implement a process for establishing recommendations for future prevention activities based on discussions of findings from the CDR data collected.

- Continue interagency discussions among local teams and the CDR Council about acts of omission and commission, best practices and protective factors in the care and supervision of children under 18 years of age.

- Identify ways to increase efficiency in the CDR process by reviewing and taking action on the Hawaii CDR Evaluation Report and working with NCCDR to assure continuity.

Improve the death review process and public reporting, is critical for the prevention of child deaths in Hawaii. Suggested focus areas for the future include:

- Continue to partner with Injury and Violence Prevention Program and other child advocate groups to address to sudden unexpected infant deaths and develop a plan for action.

- Enhance interagency cooperation and understanding of the CDR process by sharing findings with the Keiki Injury Prevention Coalition and other groups committed to promoting safety and redacting child injury, maltreatment, and death in Hawaii.

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# APPENDIX A: Hawaii Revised Statutes

Hawaii Revised Statutes §321-341 through §321-346

[PART XXVII.] CHILD DEATH REVIEW

**[§321-341]Multidisciplinary and multiagency reviews.** The department of health may conduct multidisciplinary and multiagency reviews of child deaths in order to reduce the incidence of preventable child deaths. [L 1997, c 369, pt of §1]

**[§321-342] Definitions.** As used in this part:

"Child" means a person under eighteen years of age.

"Child death review information" means information regarding the child and child's family, including but not limited to:

(1) Social, medical, and legal histories;
(2) Death and birth certificates;
(3) Law enforcement investigative data;
(4) Medical examiner or coroner investigative data;
(5) Parole and probation information and records;
(6) Information and records of social service agencies;
(7) Educational records; and
(8) Health care institution information.

"Department" means the department of health.

"Director" means the director of health or the director's designated representatives.

"Family" means:

(1) Each legal parent;
(2) The natural mother;
(3) The natural father;
(4) The adjudicated, presumed, or concerned natural father as defined under Section 578-2;
(5) Each parent's spouse or former spouses;
(6) Each sibling or person related by consanguinity or marriage;
(7) Each person residing in the same dwelling unit; and
(8) Any other person who, or legal entity that, is a child's legal or physical custodian or guardian, or who is otherwise responsible for the child's care, other than an authorized agency that assumes such a legal status or relationship with the child under chapter 587.

"Preventable death" means a death that reasonable medical, social, legal, psychological, or educational intervention may have prevented.

"Provider of medical care" means any health care practitioner who provides, or a facility through which is provided, any medical evaluation or treatment, including dental and mental health evaluation or treatment. [L 1997, c 369, pt of §1]

**[§321-343] Access to information.** (a) Upon written request of the director, all providers of medical care and state and county agencies shall disclose to the department, and those individuals appointed by the director to participate in the review of child deaths, child death review information regarding the circumstances of a child's death so that the department may conduct a multidisciplinary and multiagency review of child deaths pursuant to section 321-31 and this part. (b) To the extent that this section conflicts with other state confidentiality laws, this section shall prevail. [L 1997, c 369, pt of §1]

**[§321-344] Exception.** Information regarding an ongoing civil or criminal investigation shall be disclosed at the discretion of the applicable state, county or federal lawenforcement agency. [L 1997, c 369, pt of §1]

**[§321-345] Use of child death review information and records.** (a) Except asotherwise provided in this part, all child death review information acquired by thedepartment during its review of child deaths pursuant to this part, is confidential and mayonly be disclosed as necessary to carry out the purposes of this part. (b) Child death review information and statistical compilations of data that do not contain any information that would permit the identification of any person shall be publicrecords. (c) No individual participating in the department's multidisciplinary and multiagency review of a child's death may be questioned in any civil or criminal proceeding regarding information presented in or opinions formed as a result of a child death review meeting. Nothing in this subsection shall be construed to prevent a person from testifying to information obtained independently of the department's multidisciplinary and multiagency review of a child's death, or which is public information, or where disclosure is required by law or court order. (d) Child death review information held by the department as a result of child death reviews conducted under this part are not subject to subpoena, discovery, or introduction into evidence in any civil or criminal proceeding, except that child death review information otherwise available from other sources is not immune from subpoena, discovery, or introduction into evidence through those sources solely because they were provided as required by this part. [L 1997, c 369, pt of §1]

**[§321-346] Immunity from liability.** All agencies and individuals’participating in the review of child deaths pursuant to this part shall not be held civilly or criminally liable for providing the information required under this part. [L 1997, c 369,pt of §1]

# APPENDIX B: Criteria for Local Team Review

**REVIEW CRITERIA**

A child's death is a sentinel event that can identify other children at risk for injuries or illness. All child deaths under age 18, including non-resident deaths, are to be reviewed by the Hawaii Child Death Review System. Unexpected and unexplained deaths will be reviewed by local teams using criteria with elements of preventability associated with them. Deaths deemed non-preventable will not be referred for Local CDR Team review. The Office of Health Status Monitoring provides information on child deaths. The CDR Nurse Coordinator will provide lists to Local teams. Local Team lists will include residents and non-residents who died in their county or jurisdiction (Military). Local Team members will be asked to identify deaths known to their agencies. The CDR Nurse Coordinator and Family Health Services Medical Director will determine deaths for local team review considering:

**MANNER OF DEATHS**

Manner of deaths for review include; homicide, accident, suicides, undetermined, select natural.

**CAUSES OF DEATH**

All injury (external) causes of death will be reviewed by local teams. These include:

- Motor Vehicle and other transport
- Fire, burn, or electrocution
- Drowning
- Suffocation
- Weapon, including body part
- Animal bite or attack
- Fall or crush
- Poisoning
- Exposure
- Undetermined/unexplained deaths

Other medical unexpected deaths with elements of preventability and unexplained causes of death such as SIDS or SUID will be reviewed by local teams. SUIDI includes; metabolic errors and unknown causes.

**PLACE OF DEATH**

Local teams will review deaths that are residents of their county or jurisdiction (Military) as well as those who died in their community.

**AGENCY INVOLVEMENT**

All Honolulu Medical Examiner or Neighbor Island coroners' deaths with autopsies and deaths known to have Child Welfare Services or Law Enforcement involvement will be reviewed.

**DEATHS UNDER LITIGATION**

Deaths being criminally prosecuted or civilly tried will be reviewed in the CDR System. Team members associated with legal or criminal systems will determine their participation in a review.

# APPENDIX C: Confidentiality Statement

(4/20/98)

**STATE CHILD DEATH REVIEW COUNCIL AND LOCAL REVIEW TEAMS**

I, the undersigned, agree to abide by the confidentiality requirements set forth in section 321-345, Hawaii Revised Statutes (HRS), with the intent of protecting the confidentiality of the records, the privacy of the persons(s) named therein, and the privacy of the family of the named persons(s).

I agree to maintain the confidentiality of all child death information, as defined in section 321-342 HRS, provided to the State Child Death Review Council and local review teams. I further understand that no materials will be taken from the meetings other than the official report with name(s) of other identifying information.

All materials applicable to the agency with names and identifying information will remain with that agency representative.

Signature: _____

Print Name: _____

Agency: _____

Date: _____

Witness: _____

Date: _____

# REFERENCES


[i] Population Division, U.S. Census Bureau, Available from: http:/quickfacts.census.gov/qfd/states/.

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